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ABSTRACT

This booklet focuses on eight elements of population dynamics: "Population Growth and Distribution"; "Natural Increase and Future Growth"; "Effect of Migration on Population Growth"; "Three Patterns of Population Change"; "Patterns of World Urbanization"; "The Status of Women"; "World Health"; and "Environmental Relationships." Charts and graphs supplement each topic with one full-size chart suitable for class distribution or transparencies. A series of defined terms and a frequently asked question accompany each topic. The most recent "World Population Data Sheet" and a teacher's guide, which contains information and questions for class discussion, accompany the booklet. (BT)

human POPULATION

Fundamentals of growth and change

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Human Population: Fundamentals of Growth and Change is an update of **World Population: Fundamentals of Growth and World Population: Toward the Next Century**. Revisions and additions were made by Cheryl Lynn Stauffer, November 2000.

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This booklet focuses on eight elements of population dynamics. Charts and graphs supplement each topic with one full-size chart suitable for class distribution or transparencies. Along with each topic are a series of defined terms and a frequently asked question. The most recent *World Population Data Sheet* and a teacher's guide of discussion questions and web resources accompany this booklet.

Grade level: middle to high school

Time required: one week

Subjects: social studies, geography, and world history

Human Population: Fundamentals of Growth and Change is available online at PRB's Educators Forum: www.prb.org/ef/

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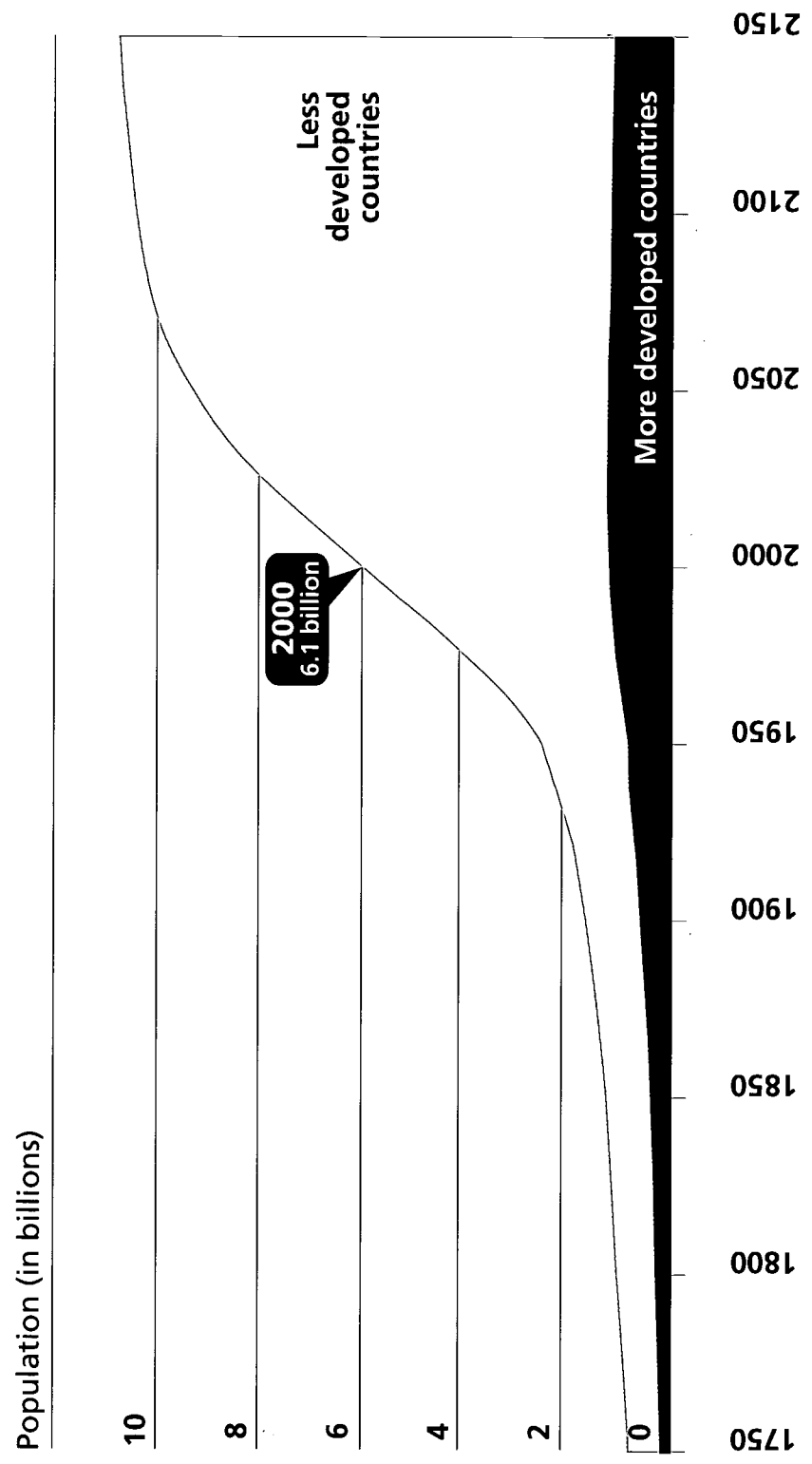
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WORLD POPULATION GROWTH, 1750-2150



Source: United Nations, *World Population Prospects, The 1998 Revision*; and estimates by the Population Reference Bureau.

population GROWTH and DISTRIBUTION

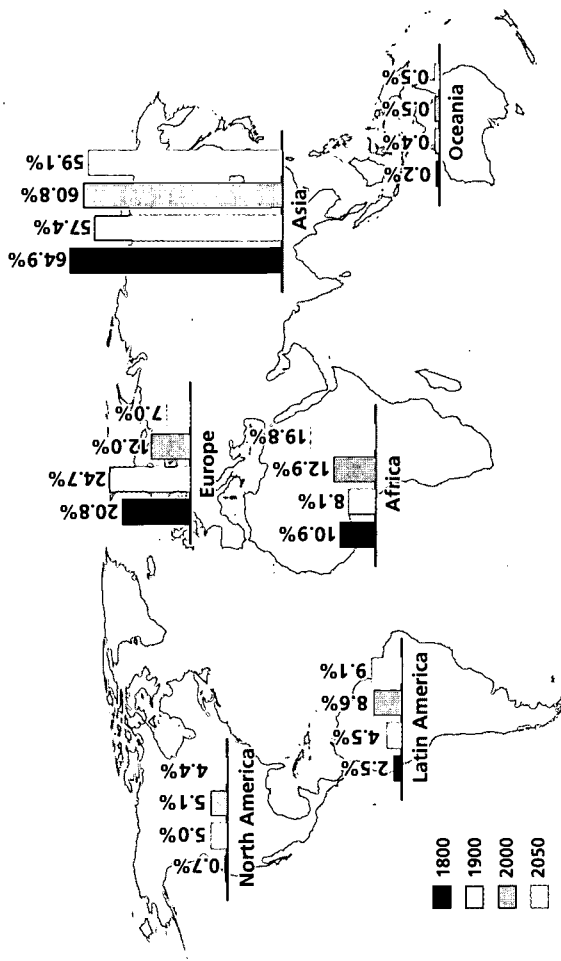
In 2000, the world had 6.1 billion human inhabitants. This number could rise to more than 9 billion in the next 50 years. For the last 50 years, world population multiplied more rapidly than ever before, and more rapidly than it will ever grow in the future.

Anthropologists believe the human species dates back at least 3 million years. For most of our history, these distant ancestors lived a precarious existence as hunters and gatherers. This way of life kept their total numbers small, probably less than 10 million. However, as agriculture was introduced, communities evolved that could support more people.

World population expanded to about 300 million by A.D. 1 and continued to grow at a moderate rate. But after the start of the Industrial Revolution in the 18th century, living standards rose and widespread famines and epidemics diminished in some regions. Population growth accelerated. The population climbed to about 760 million in 1750 and reached 1 billion around 1800 (see chart, "World population growth, 1750-2150," p. 2).

In 1800, the vast majority of the world's population (86 percent) resided in Asia and Europe, with 65 percent in Asia alone (see chart, "World population distribution by region, 1800-2050"). By 1900, Europe's share of world population had risen to 25 percent, fueled by the population increase that accompanied the Industrial Revolution. Some of this growth spilled over to the Americas, increasing their share of the world total.

World population distribution by region, 1800-2050



Source: United Nations Population Division, *Briefing Packet, 1998 Revision of World Population Prospects*.

World population growth accelerated after World War II, when the population of less developed countries began to increase dramatically. After millions of years of extremely slow growth, the human population indeed grew explosively, doubling again and again; a billion people were added between 1960 and 1975; another billion were added between 1975 and 1987. Throughout the 20th century each additional billion has

been achieved in a shorter period of time. Human population entered the 20th century with 1.6 billion people and left the century with 6.1 billion.

The growth of the last 200 years appears explosive on the historical timeline. The overall effects of this growth on living standards, resource use, and the environment will continue to change the world landscape long after.

EXPONENTIAL GROWTH

As long ago as 1789, Thomas Malthus studied the nature of population growth in Europe. He claimed that population was increasing faster than food production, and he feared eventual global starvation. Of course he could not foresee how modern technology would expand food production, but his observations about how populations increase were important. Population grows geometrically (1, 2, 4, 8...), rather than arithmetically (1, 2, 3, 4...), which is why the numbers can increase so quickly.

A story said to have originated in Persia offers a classic example of exponential growth. It tells of a clever courtier who presented a beautiful chess set to his king and in return asked only that the king give him one grain of rice for the first square, two grains, or double the amount, for the second square, four grains (or double again) for the third, and so forth. The king, not being mathematically inclined, agreed and ordered the rice to be brought from storage. The eighth square required 128 grains, the 12th took more than one pound. Long before reaching the 64th square, every grain of rice in the kingdom had been used. Even today, the total world rice production would not be enough to meet the amount required for the final square of the chessboard. The secret to understanding the arithmetic is that the rate of growth (doubling for each square) applies to an ever-expanding amount of rice, so the number of grains added with each doubling goes up, even though the rate of growth is constant.

Similarly, if a country's population begins with 1 million and grows at a steady 3 percent annually, it will add 30,000 persons the first year, almost 31,000 the second year, and 40,000 by the 10th year. At a 3 percent growth rate, its **doubling time**—or the num-

Top 10 largest urban agglomerations in 1950, 2000, 2015

1950	2000	2015	
1. New York, USA	12.3	1. Tokyo, Japan	26.4
2. London, England	8.7	2. Mexico City, Mexico	18.4
3. Tokyo, Japan	6.9	3. Bombay, India	18.0
4. Paris, France	5.4	4. Sao Paulo, Brazil	17.8
5. Moscow, Russia	5.4	5. New York, USA	16.6
6. Shanghai, China	5.3	6. Lagos, Nigeria	13.4
7. Essen, Germany	5.3	7. Los Angeles, USA	13.1
8. Buenos Aires, Argentina	5.0	8. Calcutta, India	12.9
9. Chicago, USA	4.9	9. Shanghai, China	12.9
10. Calcutta, India	4.4	10. Buenos Aires, Argentina	12.6
			10. Calcutta, India
			17.3

Source: United Nations, *World Urbanization Prospects, The 1999 Revision*.

ber of years to double in size—is 23 years. (The doubling time for a population can be roughly determined by dividing the current growth rate into the number "69." Therefore, $69/3=23$ years. Of course, if a population's growth rate does not remain at this rate, the projected doubling time would need to be recalculated.)

The 2000 growth rate of 1.4 percent, when applied to the world's 6.1 billion population, yields an annual increase of about 85 million people. Because of the large and increasing population size, the number of people added to the global population will remain high for several decades, even as growth rates continue to decline.

Between 2000 and 2030, nearly 100 percent of this annual growth will occur in the less developed countries in Africa, Asia, and Latin America, whose population growth rates are much higher than those in **more developed countries**. Growth rates of 1.9 percent and higher mean that populations would double in about 36 years, if these rates continue. Demographers do not believe they will. Projections of growth rates are lower than 1.9 percent because birth rates are declining and

are expected to continue to do so. The populations in the less developed regions will most likely continue to command a larger proportion of the world total. While Asia's share of world population may continue to hover around 55 percent through the next century, Europe's portion has declined sharply and could drop even more during the 21st century. Africa and Latin America each would gain part of Europe's portion. By 2100, Africa is expected to capture the greatest share (see chart, "World population distribution by region, 1800-2050," p. 3).

The more developed countries in Europe and North America, as well as Japan, Australia, and New Zealand, are growing by less than 1 percent annually. Population growth rates are negative in many European countries, including Russia (-0.6%), Estonia (-0.5%), Hungary (-0.4%), and Ukraine (-0.4%). If the growth rates in these countries continue to fall below zero, population size would slowly decline. As the chart "World population growth, 1750-2150" (p. 2) shows, population increase in more developed countries is already low and is expected to stabilize.

Q&A

Has the world's population distribution changed much over time?

Surprisingly, no. During the last two centuries most of the world's people lived in Asia, while relatively few lived in Latin America, North America, and Oceania. Europe ranks second to Asia, but its share is decreasing while Africa's share is increasing.

Prior to 1800, Asia's population represented roughly two-thirds of the world total. Europe and Africa fluctuated, each usually holding between 15 percent and 20 percent of the world population. The remaining few people were scattered in Latin America, North America, and Oceania, with Latin America having the largest number. By 1800, the Industrial Revolution began in Europe and its share of global population increased. Asia maintained two-thirds of the world's people and Africa's share declined. Less than 5 percent resided in the Americas and Oceania combined (see chart, "World Population Distribution by Region, 1800-2050," p. 3). By 1900, Asia's share of the world population declined to about one-half as Europe, North America, and Latin America grew rapidly.

Since rates of population growth are currently highest in the less developed regions, their share of world population will increase. In 2000, Asia's population rose again to account for 60 percent of the world total; Africa's share increased to be equal to Europe's portion. If current trends continue, Asia will remain at 60 percent of the world total in 2050, Africa's share will rise to about

20 percent, and Europe's share will drop below Latin America's—less than 10 percent.

Over time, the distribution of population changes because of variations in the rate of natural increase and net migration. In the United States two-thirds of population growth is from natural increase and one-third is from immigration or international migration. Internal change in population distribution within the United States occurs because of internal migration rather than as a result of natural increase. Every year, nearly one in five Americans moves to a new location, making the United States one of the world's most mobile societies.

Rural-to-urban migration, combined with natural increase, is leading to a disproportionate increase in urban population, especially in

less developed countries. A century ago, only 10 percent of the world's population lived in urban areas. By 1950, the urban share had risen to 29 percent, and today it is 45 percent. By the year 2020, the majority of human beings—about three-fifths—are projected to live in urban areas, ranging from market towns to megacities.

Urban areas are getting larger. In 1950, only the New York urban area had over 10 million people. By 2010, there could be more than 26 urban areas over 10 million—twice the number in 1990. Five of these urban areas would hold over 20 million people each. Only two of the 10 largest urban areas projected for 2010 are expected to be in the more developed countries (see table, "Top 10 largest urban agglomerations," p. 4).

TERMS

Doubling time The number of years required for the population of an area to double its present size, given the current rate of population growth. Population doubling time is useful to demonstrate the long-term effect of a growth rate, but should not be used to project population size. Many more developed countries have very low growth rates and, as a result, the equation shows doubling times of hundreds or thousands of years. But these countries are not expected to

ever double again. Most, in fact, likely have population declines in their future. Many less developed countries have high growth rates that are associated with short doubling times, but are expected to grow more slowly as birth rates are expected to continue to decline.

Growth rate The number of persons added to (or subtracted from) a population in a year due to natural increase and net migration; expressed as a percentage of the population at

the beginning of the time period.

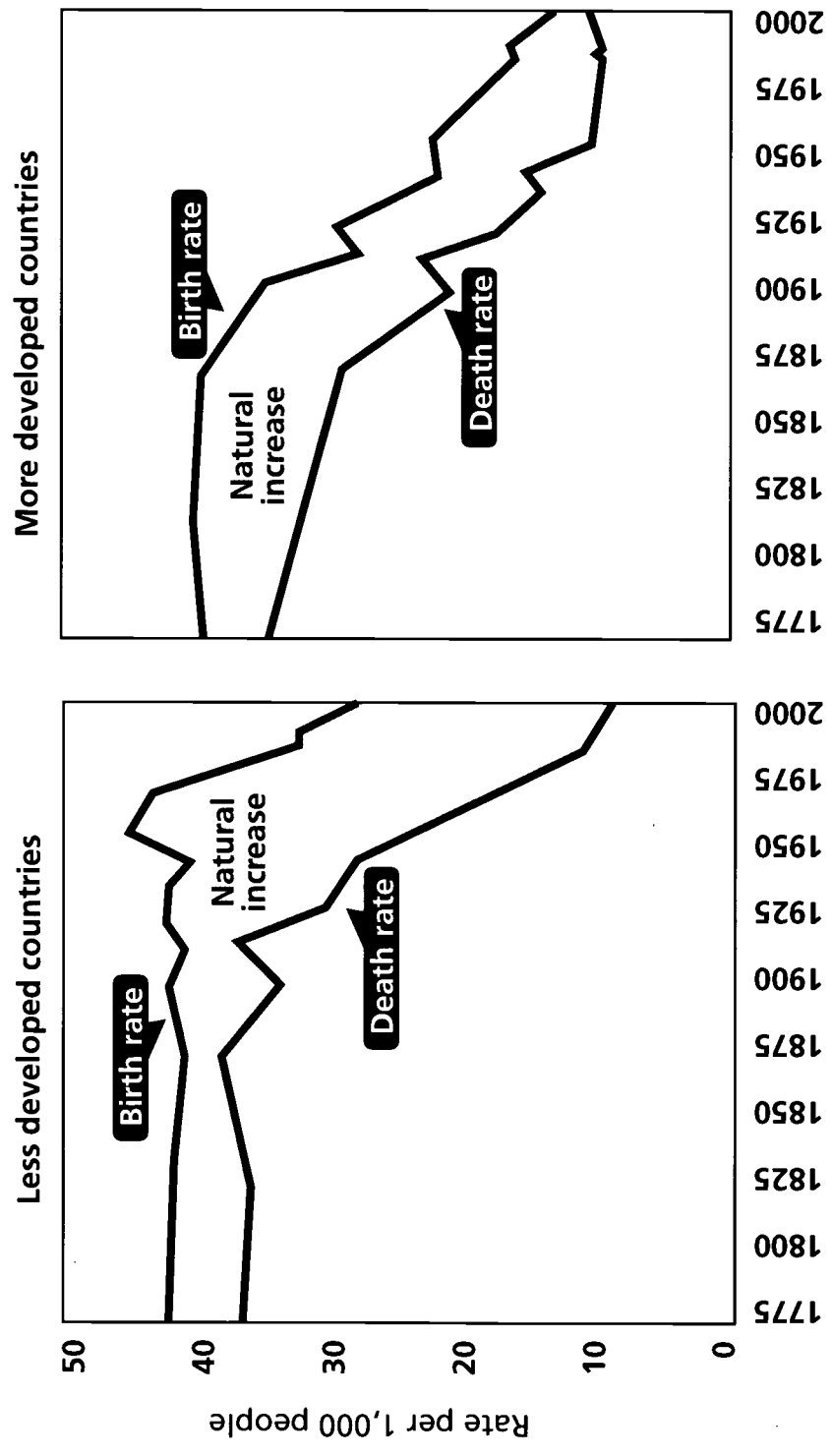
Less developed countries

Less developed countries include all countries in Africa, Asia (excluding Japan), and Latin America and the Caribbean, and the regions of Melanesia, Micronesia, and Polynesia.

More developed countries

More developed countries include all countries in Europe, North America, Australia, New Zealand, and Japan.

POPULATION GROWTH THROUGH NATURAL INCREASE, 1775-2000



Source: Population Reference Bureau.

natural increase and FUTURE GROWTH

Population change affects all our lives in a much more immediate way today than it has throughout most of human history. For the first one-half million years of human existence, the population growth rate was about zero. The population stayed about the same size from year to year. It was not until the 1700s that the modern era of population growth began. Between 1850 and 1900, the annual growth rate reached 0.5 percent. The rate surged to 2.0 percent by the mid-1960s, dropped to 1.7 percent by the mid-1980s, and declined to about 1.4 percent by 2000.

Why has world population grown at such different rates throughout history? Population change results from the interaction of three variables: births, deaths, and migration. This relationship is summarized by a formula known as the balancing equation. The difference between births and deaths in a population produces the **natural increase** (or decrease) of a population. Net migration is the difference between the number of persons entering a geographic area (immigrants) and those leaving (emigrants). Natural increase usually accounts for the greatest amount of growth in a population, especially within a short period of time. For the world, growth occurs only when there are more births than deaths; for individual countries, migration is also a factor.

THE MORTALITY REVOLUTION

Human population grew rapidly during the Industrial Revolution, not because the **birth rate** increased, but because the **death rate** began to fall. This mortality revolution began in the 1700s in Europe and spread to North America by the mid-1800s. Death rates fell as new farming and transportation technology expanded the food supply and lessened the danger of famine. New technologies and increasing industrialization improved public health and living standards. Late in the 19th century, birth rates also began to fall in Europe and North America, slowing the population growth that had resulted from continued moderately higher birth rates than death rates.

toric lows. However, the **total fertility rate** (TFR) in many more developed countries are well below replacement levels of two children per couple. In addition, poor economic conditions in the countries of the former Soviet Union have led to a serious decline in birth rates and increase in death rates, contributing to declining population size in some of these countries.

THE DEMOGRAPHIC TRANSITION

Demographers have attempted to explain the experience of these more developed countries as a **demographic transition** from high birth rates and death rates to the current low levels. This process tends to occur in three stages. First, birth and death rates are both high, so little growth occurs. Second,

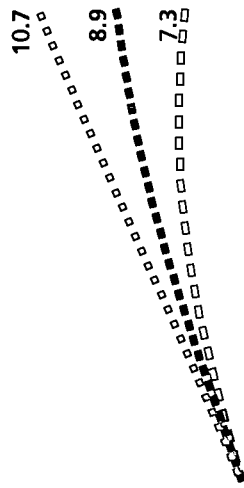
Components of population change

$$\left(\begin{array}{l} \text{Births} - \text{Deaths} \\ \text{or Natural Increase} \end{array} \right) + \left(\begin{array}{l} \text{Immigrants} - \text{Emigrants} \\ \text{or Net Migration} \end{array} \right) = \begin{array}{l} \text{Growth} \\ \text{(or Decrease)} \end{array}$$

Since 1900, both birth and death rates in the more developed countries have continued to fall in tandem, with a few interruptions. A worldwide influenza pandemic in 1918 caused the death of between 20 million and 40 million people and produced a temporary increase in the death rate. A slight increase in birth rates occurred after World Wars I and II. In the 1980s, birth and death rates in the more developed world fell to his-

death rates fall due to improved living conditions, while birth rates remain high. During this period population grows rapidly. The third stage of the transition is reached when fertility falls and closes the gap between birth and death rates, resulting again in a slower pace of population growth. The chart "Population growth through natural increase" (p. 6) is a crude representation of this transition. All the more developed coun-

Future of world population growth: three scenarios, 2000 to 2050



2000 2010 2020 2030 2040 2050

- ☐ High fertility (2.5 children per woman)
- ☒ Medium fertility (2.0 children per woman)
- ☐ Low fertility (1.6 children per woman)

Source: United Nations, *World Population Prospects, The 1998 Revision*.

tries have entered this third stage of the demographic transition. A few have gone on to a fourth stage in which death rates are higher than birth rates, and the population declines.

In contrast to the more developed countries, the less developed countries—in Asia, Africa, and Latin America—had both higher birth and death rates in the 1900s than Europe and North America had in the 1700s, and these higher rates have continued throughout the 20th century. In most less developed countries, the mortality revolution did not begin in earnest until after World War II, and it followed a different pattern than that in European countries. Birth and death rates were higher at the start of the demographic transition than they had been

in Europe or North America. Death rates fell rapidly in less developed countries through the introduction of medical and public health technology; antibiotics and immunization reduced deaths from infectious diseases; and insecticides helped control malaria. These changes did not result from economic development within the countries, but were a result of international foreign aid.

In the second stage of the demographic transition of these regions, mortality declines led to continued population growth. Birth rates even increased as a result of the better health enjoyed by the population. With declining mortality and increasing fertility rates, the population growth of the less developed countries achieved an unparalleled 2.5 percent per year in the 1960s.

Overall, mortality rates in the less developed countries fell much faster than during the demographic transition in the more developed countries. As a result, there developed a large gap in the percentage of growth between these two regions. Since 1970, birth rates have fallen, but the death rate has fallen faster. The population growth rate is still high, about 1.9 percent annually in 2000. While the patterns of fertility decline have varied dramatically throughout the less developed world, many countries are well into the transition process. Even in sub-Saharan Africa, where birth rates remained high through much of the 1980s and 1990s, fertility rates in most countries are declining.

PROJECTIONS OF WORLD POPULATION

No one really knows how large the world's population will be in the future. But we can make educated guesses by looking at past and present trends in two of the components of population growth: births and deaths. The third component, migration, can affect the

growth of individual countries, but not to world population.

The chart "Future of world population growth" (at left) illustrates three scenarios for population change, depending on levels of fertility. World population is projected to increase to 7.8 billion by 2025, and to reach 8.9 billion by 2050, according to the medium scenario where fertility stabilizes at 2.1 children per woman. This projection does not correspond with the doubling time of 51 years associated with the annual growth rate in 2000. The projection assumes that the growth rate will drop slightly by 2020 and continue declining as the century progresses. If the growth rate does fall and the world population reaches 11 billion by 2100, the population will have doubled in about 100 years.

Because most of the world's population growth is likely to continue to be in less developed countries, Asia will continue to hold the majority of the world's people. Africa and Latin America will gain larger shares than they have at present. The population of these regions may increase by 100 percent by 2100, according to moderate projections. In 2100, nearly 90 percent of world population could live in countries currently considered less developed, compared with about 80 percent today.

Q&A

When could world population stop growing?

World population will stop growing when the birth rate equals the death rate; no one knows whether this will happen.

Demographers usually assume that the birth rate and the death rate will eventually reach equilibrium several decades after couples average two children each. This two-child average is called replacement level fertility, because each couple replaces themselves in the number of people in a population. The total fertility rate refers to the average number of children women are having. When the total fertility rate is at replacement (or 2.1 children per family), the two children born essentially replace the parents when they die. The decimal value accounts for child mortality. Because some children die before they grow up to have their own children, the average number of children born can still be slightly above two and fertility would be considered at replacement level. Therefore, the

value for replacement level fertility could be higher in a country where mortality is higher.

While no one knows exactly when the population will stop growing, the United Nations and other organizations estimate that world population could continue to grow well into the 22nd century, reaching 9.8 billion by 2150. These outcomes are based on the medium projections, which assume (to varying degrees for different countries) that the downward trend of fertility rates will continue and stabilize at 2.1 children per woman. They also assume continued mortality declines. If fertility were to decrease at a much faster pace and stabilize at 1.6 children per woman, world population could stop growing much

sooner—by 2050—at 7.3 billion. Given that scenario, the population would decline to 5.3 billion by 2150. On the other hand, slower declines in fertility could lead to a global population of 10.7 billion by 2050 and 16.2 billion in 2150, with fertility projecting to stabilize at 2.5 children per woman.

We do know that future population growth is inevitable. But the range of possible future population sizes varies dramatically. Five plausible projections published by the United Nations lead to outcomes ranging from 7.3 billion people to 10.7 billion people in 2050.

TERMS

Birth rate (or crude birth rate) The number of live births per 1,000 population in a given year. Not to be confused with the growth rate.

Death rate (or crude death rate) The number of deaths per 1,000 population in a given year.

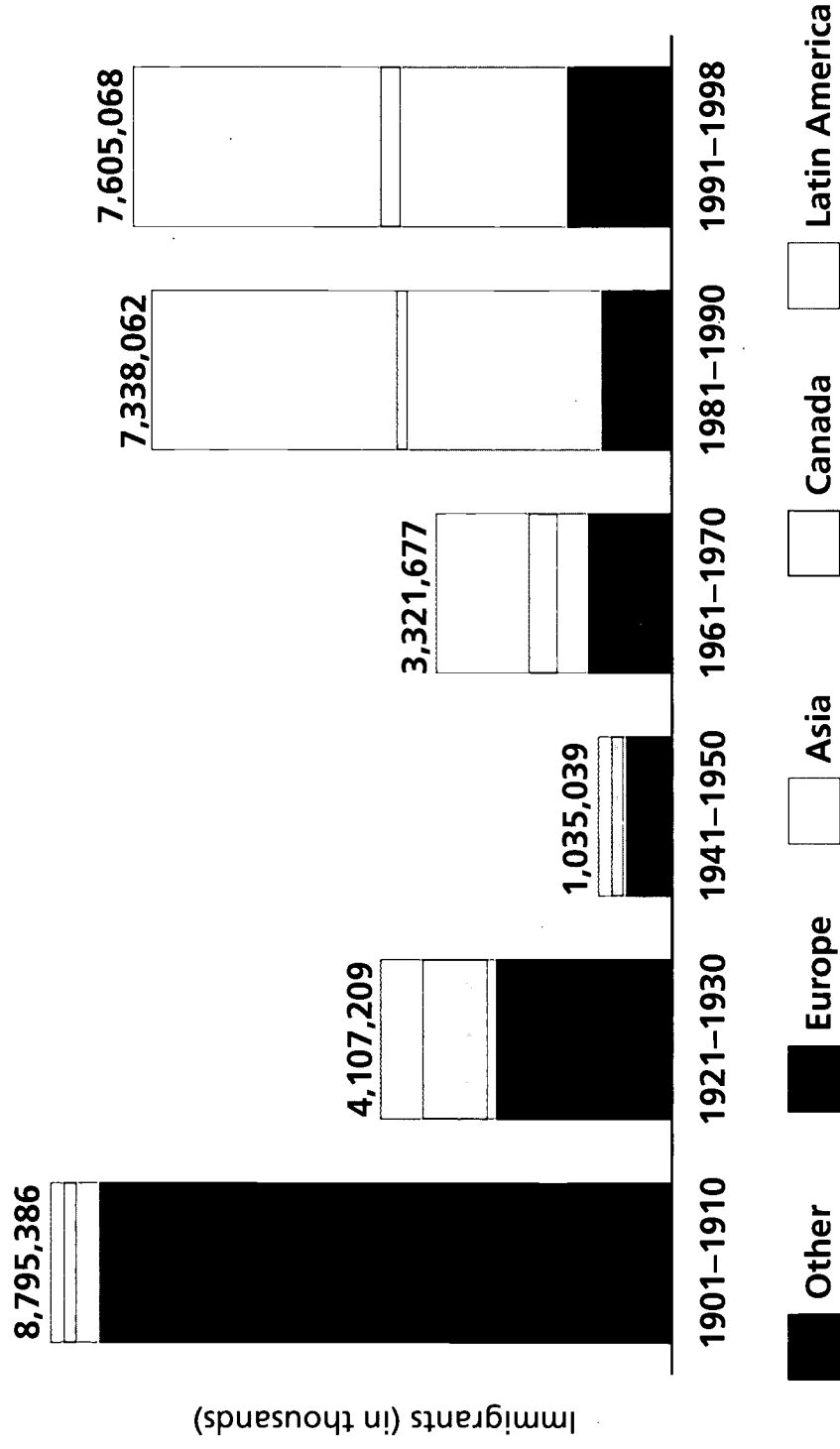
Demographic transition The historical shift of birth and death rates from high to low levels in a

population. The decline of mortality usually precedes the decline in fertility, thus producing rapid population growth during the transition period.

Rate of natural increase The rate at which a population is increasing (or decreasing) in a given year due to a surplus (or deficit) of births over deaths, expressed as a percentage of the base population.

Total fertility rate (TFR) The number of children women are having today. The average number of children that would be born alive to a woman during her childbearing years if she conformed to the age-specific fertility rates of a given year.

REGIONAL ORIGINS OF IMMIGRANTS TO THE UNITED STATES, SELECTED YEARS



Source: Immigration and Naturalization Service, 1998 Statistical Yearbook.

effect of MIGRATION on population growth

World population grows as a result of natural increase—because there are more births than deaths. In addition to natural increase, country or regional populations can grow from migration. **Net migration** is the difference between the number of persons entering a geographic area (**immigrants**) and those leaving (**emigrants**). Over time, migration contributes more than just the initial number of people moving into an area, because the children and grandchildren born to the immigrant population add several times the original number to the population base. There is also an increase in the number of deaths as a result of in-migration.

Most Americans are immigrants or descendants of immigrants who arrived here over the past 200 years. Only a small fraction of the population is related to the American Indians who were here when the first European settlers arrived in the 1600s.

Australia and Brazil are other countries whose current populations consist primarily of descendants of persons who immigrated there during the past two centuries.

INTERNATIONAL MIGRATION

International migration is at an all-time high in terms of absolute numbers. About 145 million people lived outside their native countries in the mid-1990s, and the number is increasing by anywhere from 2 million to 4 million each year.

In the mid-1990s, the largest immigration flows were from Latin America and Asia into North America, and from Eastern Europe, the countries of the former Soviet Union, and North Africa into Northern and Western Europe. The Middle East draws migrants from Africa and Asia and hosts millions of refugees from within the region. There is considerable migration within Asia, Africa, and Latin America.

WHY PEOPLE MOVE

Most people move for economic reasons, but some migrate to escape political or religious persecution or simply to fulfill a personal dream. Some experts divide the many reasons people leave their homes for a new one into **push and pull factors**. Push factors might be widespread unemployment, lack of farmland, famine, or war at home. The Great Depression (1929-1939) is a good example of a push factor, as hard times encouraged more residents to leave the United States than move in. In the 1980s and 1990s, hundreds of thousands of Africans were pushed out of their homelands to neighboring countries because of famine and civil war.

Factors that attract migrants include a booming economy, favorable immigration laws, or free agricultural land in the area to which the migrant is moving. The labor shortage in Japan is pulling record numbers of legal and illegal immigrants to fill the low-status, low-paying, or dangerous jobs that

Japanese natives reject. The United Nations estimates that to keep a working population of 87 million through 2050, Japan would have to accept 609,000 immigrants a year. Between 1990 and 1999, the number of legal foreigners increased from 1.1 million to 1.6 million. Estimates of illegal migrants in Japan range from 150,000 to 300,000.

The majority of migrants to the United States in the past 200 years were European. During the first decade of this century nearly 9 million immigrants entered this country, and more than 90 percent were from Europe (see chart, "Regional origins of immigrants to the United States, selected years," p. 10). By mid-century, just half of the migrants were from Europe. The total number of immigrants fell to around 1 million in the 1940s. In the 1980s the number of migrants increased to levels similar to those at the turn of the century. But 84 percent of these migrants were from Latin America and Asia, and just 10 percent were from Europe. The volume of legal immigration and the prevalence of migrants from Asia and Latin America will continue in the new century.

The origins of immigrants change over time, as do their numbers and the effect that they have on U.S. population growth. According to one estimate, about 42 percent of the U.S. population in 1900 resulted from immigration during the preceding century. Immigration was an even greater factor in growth between 1900 and 1950, when 20

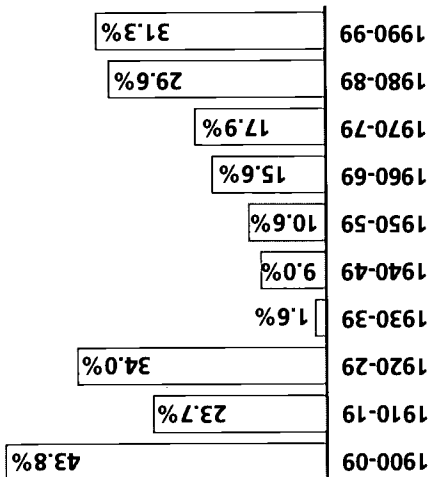
GOVERNMENT POLICIES

Of the three components of population change, migration is the most difficult component to predict and is most affected by government policies and government policies. Because nations can control their borders, they may regulate the flow of legal immigrants. The oil-producing countries in the Middle East offered financial incentives to attract immigrants, just as the United States and Australia once offered free land. In 1990, Japan permitted employment rights and residence for ethnic Japanese from Latin America. In 1998, 660,477 immigrants were admitted legally to the United States. Many foreigners also enter the country illegally each year. The exact number of persons migrating illegally to the United States is unknown, but estimates range from 100,000 to 500,000 per year.

million people entered the country. Natural increase added an average of 1 percent of the population increase per year during that period. At that rate the population would have doubled in about 70 years. But it took only 50 years to double. Migration stepped up the doubling by 20 years (see chart, "Percentage of U.S. population growth from migration," at left).

The volume of legal migration has fluctuated since the 1930s. Immigration has accounted for an increasing portion of population growth as American women began having fewer children. Today one-third of the U.S. population growth is from net migration. The U.S. Census Bureau projects that the U.S. population will reach 403,687,000 by 2050. Of this projected growth, 36 percent may result from immigration, with 46,691,756 new immigrants being added in the next 50 years.

Percentage of U.S. population growth from migration, 1900-1999



Source: U.S. Census Bureau, Current Population Reports.

Q&A

How densely populated is the planet?

The world's major regions not only vary in population size, they also vary in terms of population density—the number of people per square mile (or other unit of land area). The most densely settled region is Western Europe, with 429 inhabitants per square mile. The Caribbean ranks second, with 401 people per square mile. The least densely settled region, Oceania, has nine people per square mile—about the same as Canada. The population density of the United States is 74 (see table, “Population densities,” at right).

While population densities vary from region to region, they actually tell us little about where people live, the availability of resources, or the standard of living in a particular region. In Australia, for example, overall population density is very low—six people per square mile. However, 85 percent of the

population lives in urban areas where densities are much higher. Twenty-one percent of Australians reside in Sydney, where the density is 10,437 people per square mile.

Population density, particularly in urbanized areas, does play a role in environmental degradation. Some analysts speculate that high levels of population density can trigger environmental degradation or socially disruptive events such as mass migration or civil violence.

But population density alone does not determine well-being. A densely populated Singapore has a per capita gross national product that is nearly US\$30,170, compared to sparsely populated Somalia, which continually faces severe food shortages, despite a density of 29 people per square mile.

TERMS

Emigration The process of leaving one country to take up permanent or semipermanent residence in another.

Immigration The process of entering one country from another to take up permanent or semipermanent residence.

Net migration The net effect of immigration and emigration on an area's population in a given time period, expressed as an increase or decrease.

Push-pull factors A migration theory that suggests that circumstances at the place of ori-

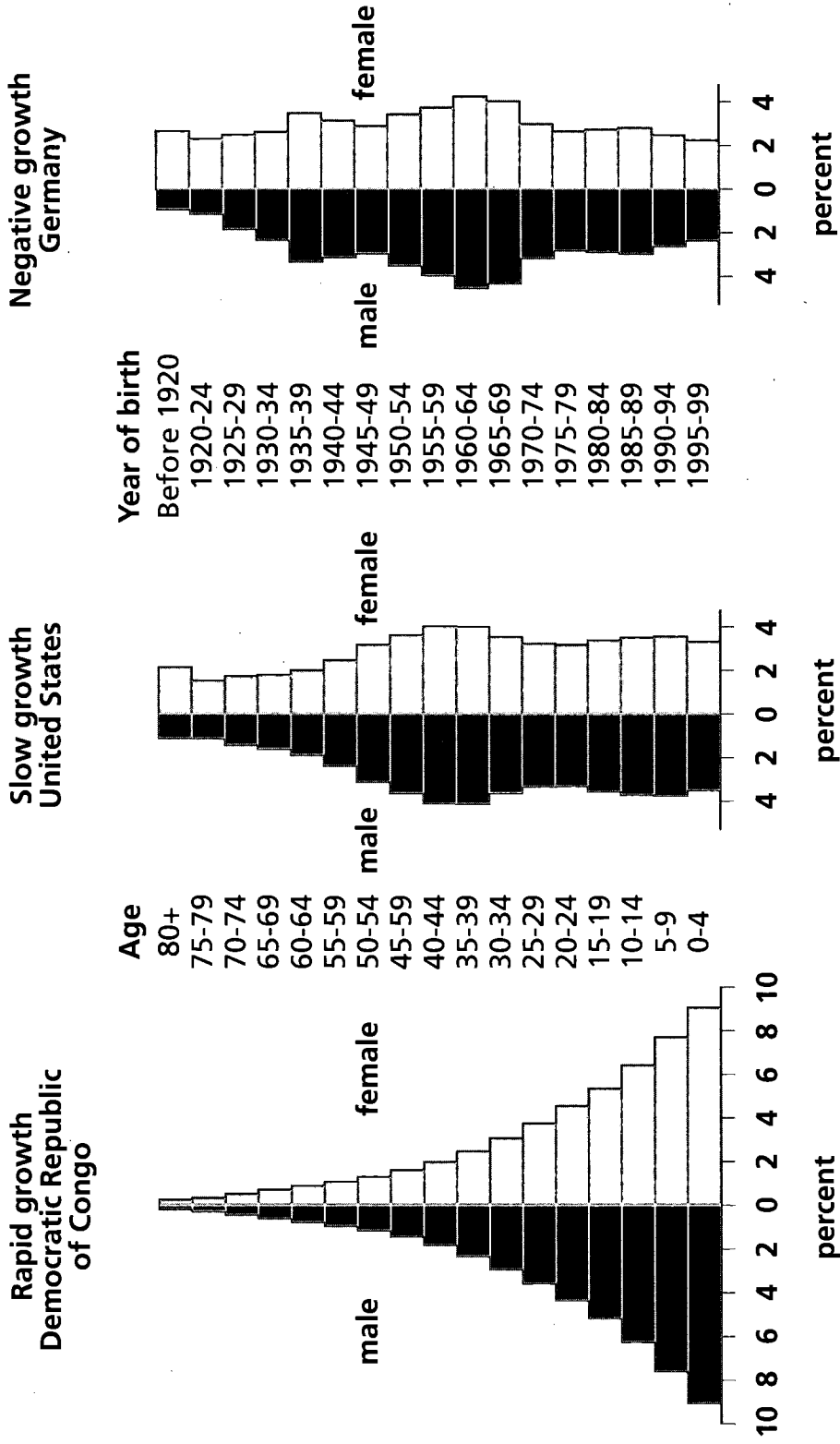
gin (such as poverty and unemployment) repel or push people out of that place to other places that exert a positive attraction or pull (such as a high standard of living or job opportunities).

Population densities, 2000

Region	Pop./Sq. mile
World	117
More developed countries	60
Less developed countries	153
Africa	68
Sub-Saharan Africa	78
Northern Africa	53
Western Africa	99
Eastern Africa	100
Middle Africa	38
Southern Africa	48
North America	40
Latin America/Caribbean	65
Central America	145
Caribbean	401
South America	50
Asia	300
Western Asia	104
South Central Asia	355
Southeast Asia	304
East Asia	328
Europe	82
Northern Europe	142
Western Europe	429
Eastern Europe	42
Southern Europe	285
Oceania	9

Source: Population Reference Bureau, 2000 *World Population Data Sheet*.

THREE PATTERNS OF POPULATION CHANGE, 2000



Source: United Nations, *World Population Prospects, The 1998 Revision*.

three patterns of POPULATION CHANGE

Aside from the total size, the most important demographic characteristic of a population is its **age and sex structure**, or the proportion of people at each age, by sex. The age-sex structure determines potential for future growth of specific age groups, as well as the total population. For these reasons, the age structure has significant government policy implications. A population of young people needs a sufficient number of schools and, later, enough jobs to accommodate them. Countries with a large proportion of older people must develop retirement systems and medical facilities to serve them. Therefore, as a population ages, needs change from childcare and schools to jobs, housing, and medical care.

POPULATION PYRAMIDS

The age-sex structure of a country can be studied through **population pyramids**. The overall shape of the pyramid indicates the potential for future growth. The four representations of population age-sex structure on p. 16 provide an overall example of what a pyramid would look like—rapid growth, slow growth, **zero growth**, and negative growth. The horizontal bars show the percentage (or in some cases the actual numbers) of males and females in each age group.

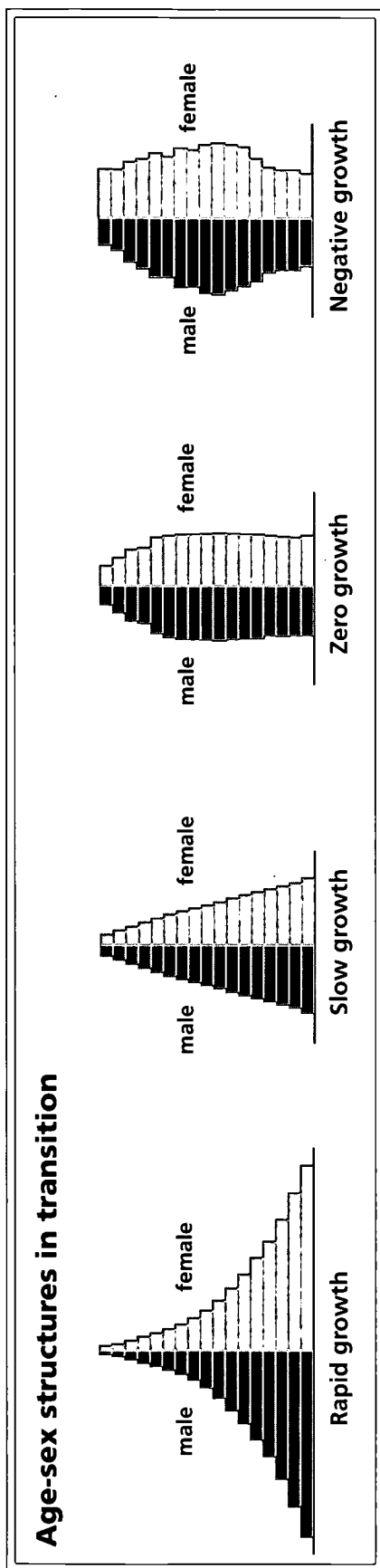
The country pyramids shown on the chart "Three patterns of population change" (p. 14), also represent different stages of

population growth going on today. The first pyramid, representing the population of the Democratic Republic of Congo, with its wide base and narrow top, is typical of a young population. This shape is the result of high birth rates that feed more and more people into the lowest bars and in turn shrink the relative proportion at the oldest ages. As the death rate declines, more people survive to the reproductive ages and beyond. The births they have further widen the base of the pyramid. This shape is common in many less developed countries that have experienced improvements in life expectancy but continue to have high birth rates. It reflects both a history of rapid population growth and the potential for future rapid growth.

The second age-sex pyramid is typical of a slowly growing population. The United States is an example of a country in slow growth. The United States has had declining fertility and mortality rates for most of this century. With lower fertility, fewer people have entered the lowest bars of the pyramid, and as life expectancy has increased, a greater percentage of the "births" have survived until old age. As a result, the population has been aging, meaning that the proportion of older persons in the population has been growing. This trend was interrupted by the postwar **baby boom**, 1946-1964, when birth rates climbed again. (The bulge of the baby-boom generation can be seen in the pyramid for ages 35-54 in 2000.) After 1964, birth rates

continued their downward trend until the late 1970s. As the last members of the baby boom approached their childbearing years during the 1980s, the number of births rose again, peaking in 1990. These children, the youngest generation, are represented by the slightly widening base of the pyramid. Even though the number of births per woman is lower than ever before, the population continues to grow because of the children and grandchildren of the huge baby-boom generation.

A few countries have reached zero population growth or are experiencing negative growth because of low birth rates and an old age structure coupled with minimal net migration. While Germany's death rate exceeds its birth rate, its population continues to grow because of net migration. Pyramids in which the proportions of the population are fairly evenly distributed among all age groups are representative of many highly industrialized societies. Germany's old population reflects an extended period of low birth and death rates. While fewer children have been born, most of those born survive through to old age. The net effect is zero growth or no natural increase. Germany's pyramid also shows the effect of higher mortality among males. In an industrialized society, females generally outnumber males after age 40. This trend is particularly evident in Germany's oldest age group.



While birth and death rates usually determine the basic pyramid shape, migration also affects it. Typically, most migrants are in the working ages, and often more males than females migrate across national borders. In some Middle Eastern countries a large number of men migrated to work in the oil fields, which caused a bulge in one side of the pyra-

mid, while it took a "bite" out of the pyramid of some of the countries from which they came.

Short-term fluctuations in birth and death rates that produce unusual bites or bulges in population pyramids, such as the baby boom, often can be traced to such historical events as wars, epidemics, economic booms, or

depressions. The decline in the birth rate during the Great Depression caused a small bite in the U.S. pyramid for the group born between 1930 and 1934. World Wars I and II caused a deficit of older men in Germany. The impact of these events emphasizes the interrelationships among population change and economic, social, political, and health factors.

Q&A

Why does it take so long to slow or stop population growth?

Growth through natural increase occurs when the birth rate exceeds the death rate. For example, the U.S. birth rate in 1999 was 14 births per 1,000 people and the death rate was 9, yielding a net increase of five persons for every 1,000 persons in the United States, or approximately 1.6 million additional persons for that year. This gap occurred in spite of a very small average family size measured by the total fertility rate—an estimate of the number of births to women during their lifetimes.

The rate of natural increase of a population depends on birth and death rates, which are strongly influenced by the population age structure. Births occur primarily to people in the younger-adult age groups. If there are comparatively more young adults than older adults where mortality is highest, then even at replacement fertility levels (when each

woman has about an average of two children) there will be more births than deaths. Hence, a relatively large number of couples each having one or two children can still produce a large excess of births. This phenomenon is known as population momentum.

In the United States, birth rates are higher than death rates at present, partly due to the large size of the baby-boom generation (who are still in their reproductive years). Even though baby-boom couples are having small families—about two children on average—births to this group still exceed the number of deaths in all age groups.

The momentum of population growth in less developed countries will only be slowed when the large number of young adults resulting from previous high fertility have passed out of the childbearing years and a succeeding smaller generation reproduces at replacement level fertility. This momentum is very pronounced in China, where women have about two children, but the number of women having children is now much larger than in the previous generation. Thus, even though it has reached replacement level fertility, China's population continues to grow.

TERMS

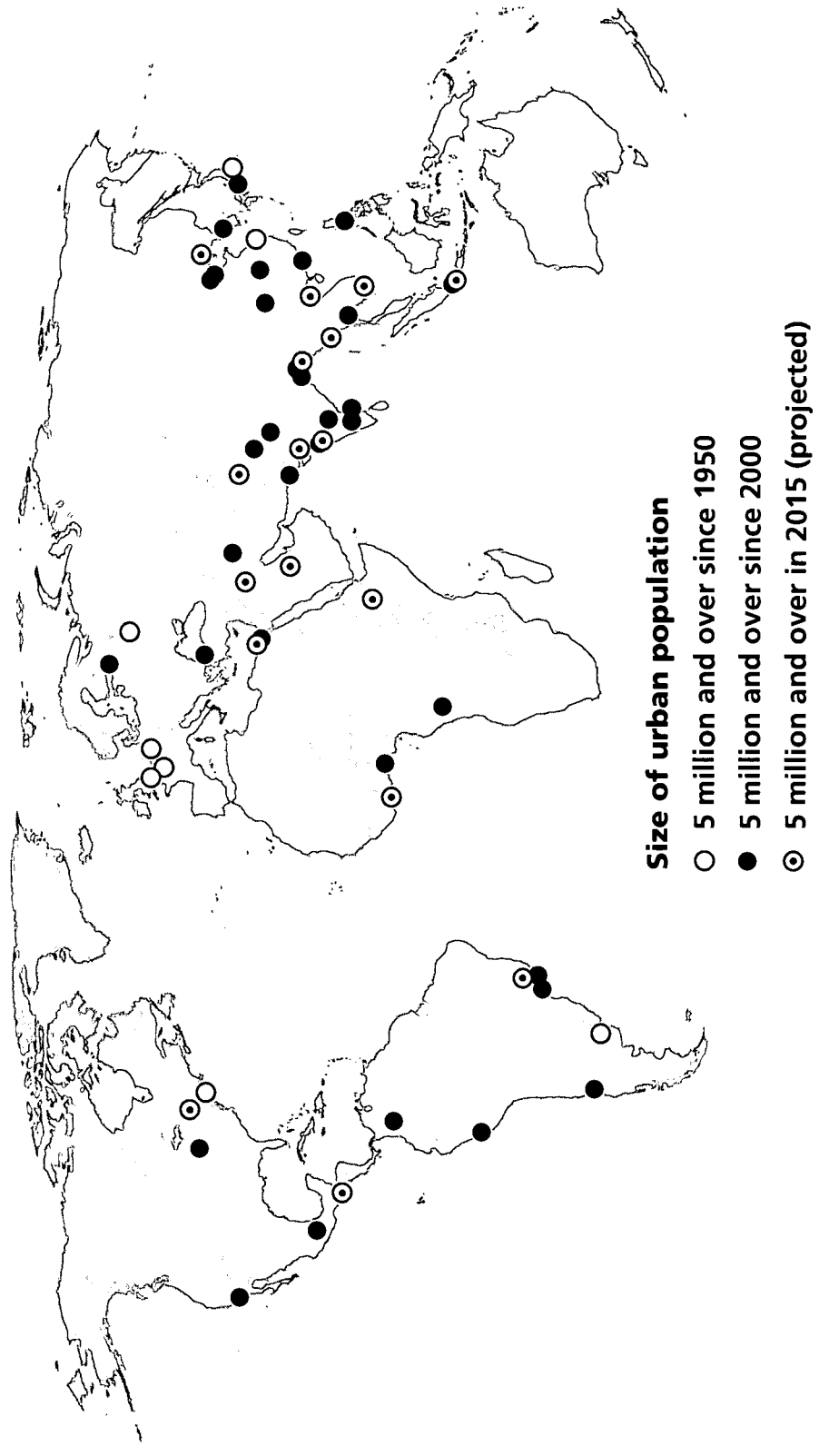
Age-sex structure The composition of a population as determined by the number or proportion of males and females in each age category. The age-sex structure of a population is the cumulative result of past trends in fertility, mortality, and migration. Information on age-sex composition is essential for the description and analysis of many other types of demographic data.

Baby boom A dramatic increase in fertility rates and in the absolute number of births. In the United States this occurred during the period following World War II (1946-1964).

Population pyramid A bar chart, arranged vertically, that shows the distribution of a population by age and sex. By convention, the younger ages are at the bottom, with males on the left and females on the right.

Zero population growth A population in equilibrium, with a growth rate of zero, achieved when births plus immigration equal deaths plus emigration. Zero growth is not to be confused with replacement level fertility.

LARGEST URBAN AGGLOMERATIONS, 1950, 2000, 2015



Source: United Nations, *World Urbanization Prospects, The 1999 Revision*.

patterns of world URBANIZATION

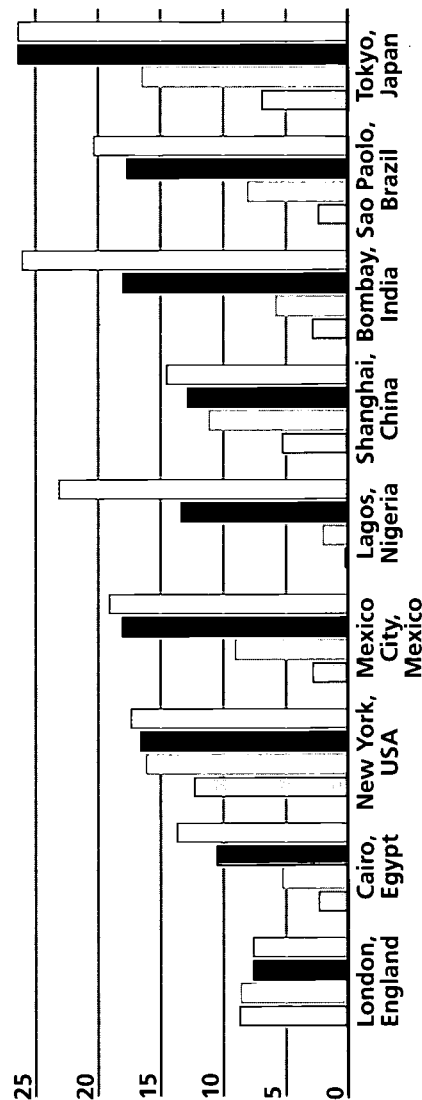
Through most of history, the human population has lived a rural lifestyle, dependent on agriculture and hunting for survival. In 1800, only 3 percent of the world's population lived in urban areas. By 1900, almost 14 percent were urbanites, although only 12 cities had 1 million or more inhabitants. In 1950, 30 percent of the world's population resided in urban centers. The number of cities with over 1 million persons had grown to 83.

The world has experienced unprecedented urban growth in recent decades. In 2000, about 47 percent of the world's population lived in urban areas, about 2.8 billion. There are 411 cities over 1 million. More developed nations are about 76 percent urban, while 40 percent of residents of less developed countries live in urban areas. However, urbanization is occurring rapidly in many less developed countries. It is expected that 60 percent of the world population will be urban by 2030, and that most urban growth will occur in less developed countries.

What is an urban area? An urban area may be defined by the number of residents, the population density, the percent of persons not dependent upon agriculture, or the provision of such public utilities and services as electricity and education. Some countries define any place with a population of 2,500 or more as urban; others set a minimum of 20,000. There are no universal standards, and generally each country develops its own set

Growth of urban agglomerations, 1950-2015

Population (in millions) 1950 1970 2000 2015



Source: United Nations, *World Urbanization Prospects, The 1999 Revision*.

of criteria for distinguishing urban areas. The United States defines urban as a city, town, or village with a minimum population of 2,500 people. The classification of metropolitan includes both urban areas as well as rural areas that are socially and economically integrated with a particular city.

When comparing countries it is often helpful to look beyond the proportion of populations that are rural or urban and instead consider the size of cities. Countries differ markedly in the distribution of their urban population. For example, many urban

dwellers in Africa live in cities of fewer than 10,000 residents. In Argentina, 90 percent of the 2000 population was urban, and 38 percent of these people lived in just one city, Buenos Aires. In 2000, 39 percent of the world's urbanites lived in agglomerations of 1 million or more inhabitants, and 15 percent resided in agglomerations of 5 million or more. Only 8 percent of Americans live in cities of 1 million or more.

Top 10 largest urban agglomerations in 1950, 2000, 2015

1950	2000	2015
1. New York, USA	12.3	1. Tokyo, Japan
2. London, England	8.7	2. Mexico City, Mexico
3. Tokyo, Japan	6.9	3. Bombay, India
4. Paris, France	5.4	4. Sao Paulo, Brazil
5. Moscow, Russia	5.4	5. New York, USA
6. Shanghai, China	5.3	6. Lagos, Nigeria
7. Essen, Germany	5.3	7. Los Angeles, USA
8. Buenos Aires, Argentina	5.0	8. Calcutta, India
9. Chicago, USA	4.9	9. Shanghai, China
10. Calcutta, India	4.4	10. Buenos Aires, Argentina
		1. Tokyo, Japan
		2. Bombay, India
		3. Lagos, Nigeria
		4. Dhaka, Bangladesh
		5. Sao Paulo, Brazil
		6. Karachi, Pakistan
		7. Mexico City, Mexico
		8. New York, USA
		9. Jakarta, Indonesia
		10. Calcutta, India

Source: United Nations, *World Urbanization Prospects, The 1999 Revision*.

MIGRATION OR NATURAL INCREASE

A city grows through natural increase—the excess of births over deaths—and because the in-migration of people from other cities, rural areas, or countries is greater than out-migration. More developed and less developed countries of the world differ not only in the percent living in cities, but also in the way in which urbanization is occurring.

During the 19th and early 20th centuries, urbanization resulted from and contributed to industrialization. New job opportunities in the cities spurred the mass movement of surplus population away from the countryside. At the same time, migrants provided cheap, plentiful labor for the emerging factories. While the proportion increased through rural to urban migration, high death rates in the cities slowed urban growth. Cities were unhealthy places because of crowded living conditions, the prevalence of contagious diseases, and the lack of sanitation. Until the mid-1800s, the number of deaths exceeded births in many large European cities. Migration accounted for as much as 90 percent of city growth during this period.

Urbanization in most less developed countries in the past 50 years contrasts sharply with the experience of the more developed countries. Death rates have fallen faster in urban areas because of greater access to health services. Because birth rates are relatively high in most less developed countries, the rates of natural increase are also quite high in cities. Migration also fuels urban growth in less developed countries as people leave the countryside in search of better jobs.

The chart “Growth of urban agglomerations” (p. 19) shows population growth in selected cities. New York and London are typical of large cities in more developed countries that arose in the 1800s and early 1900s, reached their current size mid-century, and have since experienced slow growth or decline. Cities in some less developed countries, such as Mexico City, grew very rapidly between 1950 and 1980, and are growing more slowly now. Many Asian and African cities, such as Lagos and Bombay, are experiencing very rapid growth now and are projected to continue at this pace.

MEGACITIES

As the population increases, more people will live in large cities. Many people will live in the growing number of cities with over 5 million inhabitants known as **megacities**. As the map “Largest urban agglomerations” (p. 18) shows, just eight cities had populations of 5 million or more in 1950, two of them in less developed countries. Megacities numbered 41 in 2000. By 2015, 59 megacities will exist, 48 in less developed countries.

By the turn of the century, cities of 10 million and larger will be more common. In 1950, only one city had more than 10 million inhabitants (see table, “Top 10 largest urban agglomerations,” at left). By 2015, 23 cities are projected to hold over 10 million people; all but four will be in less developed countries.

Q&A

What are the social implications of rapid population growth in less developed countries?

This is a complex issue. Rapid population growth in less developed countries is linked to many problems—including poverty, hunger, high infant mortality, and inadequate social services, health services, and infrastructure (transportation, communication, etc.). It would be a gross oversimplification to say that population growth causes these problems. Population growth could just as easily have been the effect of economic insecurity and poor health care. However, rapid population growth may defeat efforts to combat poverty and hunger and to improve services, as increasing numbers of people put serious pressures on the economy and society of poor nations.

Poverty, for example, existed long before the recent period of rapid population growth. An assessment of poverty must consider the amount and type of natural resources, including minerals and geographic features, that a country possesses or lacks. It must also include an examination of the country's political and social structure. In areas where power and wealth are concentrated in the hands of a few, it is difficult for the poor to break out of the cycle of poverty that is often passed from generation to generation. Rapid population growth makes this effort even more difficult.

Hunger has always been a companion to poverty. Most experts agree that the world could feed today's population, and a considerably larger number, if income were redistributed, if modern farming methods were used everywhere, if land reform policies were put into effect, if meat consumption were reduced, if non-nutritious crops were replaced by nutritious crops, and if waste and corruption were controlled. However, rapid population growth may intensify the hunger problem; in the most rapidly growing countries, population growth can reduce or eliminate food production gains resulting from modernization of farming. Population pressures may also encourage practices such as overirrigation and overuse of croplands, which undermine the capacity to feed larger numbers.

In some cases, population growth is quite directly related to a social problem because it increases the absolute numbers whose needs must be met. For example, some less developed countries have made enormous progress in increasing the percentage of children enrolled in school. However, because of population growth during the same period, the number of children who are not enrolled in school also increased because there were insufficient resources to meet the growing need. Similar observations could be made about jobs, housing, sanitation, and other human needs. These problems are compounded when large numbers migrate from rural to urban areas and increase the burden placed on already inadequate supplies and services.

TERMS

Megacities A city with a population of 10 million or more residents.

Metropolitan area A large concentration of population, usually an area with 100,000 or more people. The area typically includes an important city with 50,000 or more inhabitants and the administrative areas bordering the city that are socially and economically integrated with it.

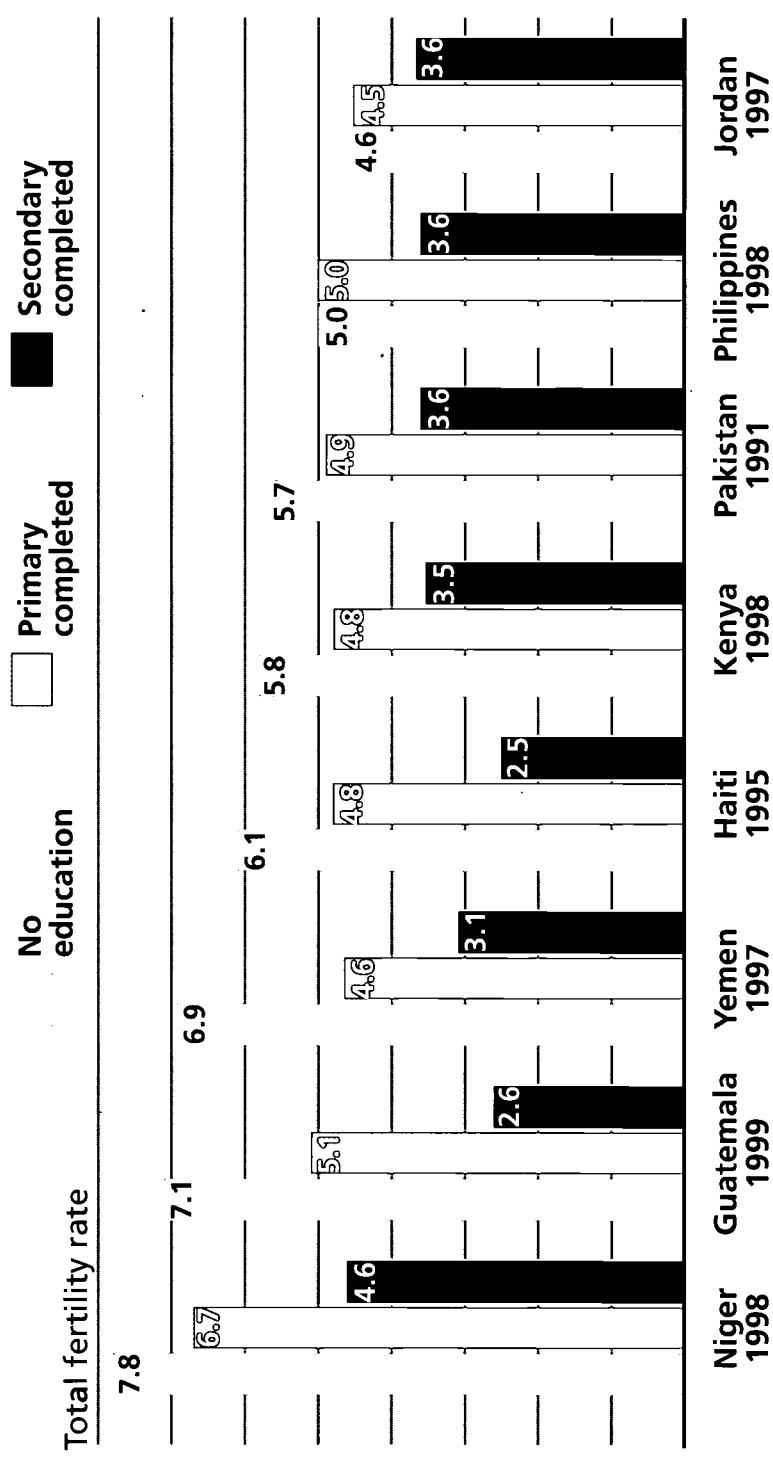
Urban Countries differ in the way they classify population as "urban" or "rural." Typically, a community or settlement with a population of 2,000 or more is considered urban. A listing of country definitions is published annually in the United Nations *Demographic Yearbook*.

Urban agglomeration Urban agglomerations are areas of 1 million population or more.

The concept of agglomeration defines the population contained within the contours of contiguous territory inhabited at urban levels of residential density without regard to administrative boundaries.

Urbanization Growth in the proportion of a population living in urban areas.

WOMEN'S EDUCATION AND FAMILY SIZE IN SELECTED COUNTRIES, 1990s



Source: Demographic and Health Surveys, 1991-1999.

the status of WOMEN

The population of the world surged from 2.4 billion in 1950 to 6.1 billion 50 years later, because birth rates remained high at the same time that death rates began to fall. The number of children that a couple will have is determined by many factors, including health, religion, culture, economic status, and the ability to have the number they wish to have. Many of these factors relate to the status of women—the social, economic, and cultural circumstances of women in society and of individual women in different societies. Because these factors help determine the number, spacing, and timing of births, women's choices (or lack thereof) regarding childbirth directly affect population growth.

FACTORS AFFECTING FAMILY SIZE

Biological, cultural, and socioeconomic conditions together determine the number of children that a woman will have. These conditions influence her exposure to intercourse and her ability to conceive a child, as well as the number of children she may wish to have. Some factors include age at marriage, use of family planning methods, and breastfeeding. Many socioeconomic factors are also important influences on fertility. These factors are sometimes indirectly related. Education, urbanization, labor force participation, and infant mortality have a strong correlation with levels of fertility. But it is difficult to determine direct causation and one must be careful not to confuse causation with cor-

Women's age at first marriage (years) and family size (TFR) in selected countries, 1990s

15.9	Chad	6.6
16.5	Yemen	6.5
19.4	Guatemala	5.0
20.8	Haiti	4.7
21.5	Jordan	4.4
14.2	Bangladesh	3.3
19.7	Egypt	3.3
18.9	Indonesia	2.8
20.1	Uzbekistan	2.8
25.1	USA	2.1
Average age at first marriage		Total fertility rate

Sources: *Demographic and Health Surveys, 1991–1999*; and Population Reference Bureau, *2000 World Population Data Sheet*.

relation. Some factors may be merely related to fertility rates, and other unknown factors may be the real cause of different levels of fertility among different women and different societies.

Generally, the age at which a woman first marries is directly related to the number of children she will bear because it affects the

length of time she will be at risk of becoming pregnant. Of course, unmarried women may also have children, but the vast majority of childbearing takes place within marriage throughout most of the world, which makes the age at marriage a valuable indicator of a woman's lifetime fertility. The total fertility rate—or average births per woman—for German women, who marry around age 24, is 1.3. Conversely, women in Chad, who marry earlier, average 7 children (see chart,

"Women's age at first marriage and family size," at left). Within countries, rural women tend to marry earlier than urban women and tend to have larger families. Access to contraception is an important contributor to the differences in the fertility rates among countries, but culture and socioeconomic factors weigh heavily as well.

Women's access to education, health care, family planning, and employment all affect family size. Studies show that women who have completed primary school have fewer children than those with no education. Education is key because educated women are more likely to know what social, community, and health services, including family planning, are available and to have the confidence to use them. In addition, women with more education have more opportunities outside the home and can see the benefits of education for their children. Women who achieve a relatively high level of education are also more likely to enter the labor force

before they marry or begin childbearing, and ultimately to have smaller families than women who marry in their teens. This trend is evident in almost every country where data are available. As the chart "Women's education and family size" (p. 22) shows, women with a secondary school education have substantially smaller families than women with less education.

Evidence shows that efforts to lower birth rates may depend on improving the status of women. Part of the Cairo Programme of Action, developed at the 1994 International Conference on Population and Development, calls for universal access to education, employment opportunities for women, and an end to discrimination against women. Experiences in some countries have shown that fertility patterns can change in as little as a decade, and that voluntary policies and programs can be highly effective in encouraging the change.

AN EXAMPLE FROM INDIA

Women in the southern Indian state of Kerala demonstrate the role of a woman's status in lowering birth rates and improving child and maternal health. Kerala is primarily rural and agricultural, as is most of India. The residents have low incomes. Yet, in the early 1990s, women in Kerala were bearing about two children, on average. That is the same as the average in the United States today, and less than the average for India (3.2). Between 1970 and 1992, Kerala's TFR dropped from 4.1 to 2.0 children per woman, the largest decline of any Indian state. By the end of the 1990s, the total fertility rate was down to about 1.8 children per woman. The infant mortality rate is also low, 14 deaths of infants under age 1 per 1,000 live births in a given year.

Why are the women in Kerala different? One obvious difference is their higher educational level. While most Indian women cannot read and write, 85 percent of women in Kerala are literate. The state government has assigned a high priority to ensuring that all residents have access to education.

But today's high literacy rates and good maternal health are only two indicators of the higher status women in Kerala have enjoyed for a long time. In traditional Keralese culture, women can inherit land and

Demographic and socioeconomic indicators in India and the United States, late 1990s

	United States	India	Kerala
Total fertility rate	2.1	3.2	1.8
Infant mortality rate	7	68	14
Life expectancy (male)	74	60	71
Life expectancy (female)	79	61	75
Female literacy	99	57	85
Contraceptive prevalence (all methods)	76	48.2	63.7

Sources: Population Reference Bureau, 2000 *World Population Data Sheet*; Registrar General of India; and National Family Health Survey 1998-99 (NFHS-2).

wield some political power—a sharp contrast with other parts of India. And, while in most of India girls are considered a drain on family finances because their parents must pay a dowry to marry them off, Keralese women bring their families a brideprice. In Kerala, girls are considered an asset.

Q&A

Which policies are most effective in reducing population growth?

Since 1970, birth rates have dropped, sometimes quite rapidly, in many less developed countries. This is an encouraging sign to those governments that have identified rapid population growth as an obstacle to their development goals. Declines have occurred in settings that vary widely. In an attempt to influence the population size and composition of their country, governments have established **population policies**.

Research studies have found that organized programs to make family planning information and services widely available have the most immediate results and cost less than other programs. Less developed countries that have implemented successful programs have made a strong political commitment to culturally sensitive, conveniently located outreach programs that offer users a wide variety of family planning methods. In particular, programs in which female family planning workers visit women in their homes bring about a tremendous increase in the use of contraception. In traditional societies, family planning programs are most successful when community leaders, those people who have a strong influence on a group's decisionmaking

and on individual attitudes, support them. The importance of this factor is reinforced by a reanalysis of the fertility decline in 19th century Europe. The study found that a change in cultural attitudes toward the acceptability of limiting family size was as essential as the social and economic improvements that were occurring.

However, to reduce fertility to the level required to bring about slow population growth, social and economic improvement is necessary as well. Couples living in extreme poverty have little reason to think that having fewer children would improve their marital existence. Children may indeed represent their future security since many people depend on their children for household and agricultural work and for support in old age. Studies have found that when poor families achieve a certain level of income there is a drop in fertility. The availability of family planning services can help translate ideas about smaller family size into reality.

The status of women also affects fertility levels. Many women, especially in less developed countries, have few choices in life outside of marriage and children and tend to have large families. Investing in women, by providing education, health, and other services, helps to widen their opportunities and reduce their dependence on children for status and support.

Immigration policies are also used to regulate population growth. Some countries openly encourage emigration to relieve crowding and unemployment. Other countries restrict the number of people who may enter and become citizens. Some countries absorb many illegal immigrants despite specific policy choices, and others may choose to accept a large number of refugees.

TERMS

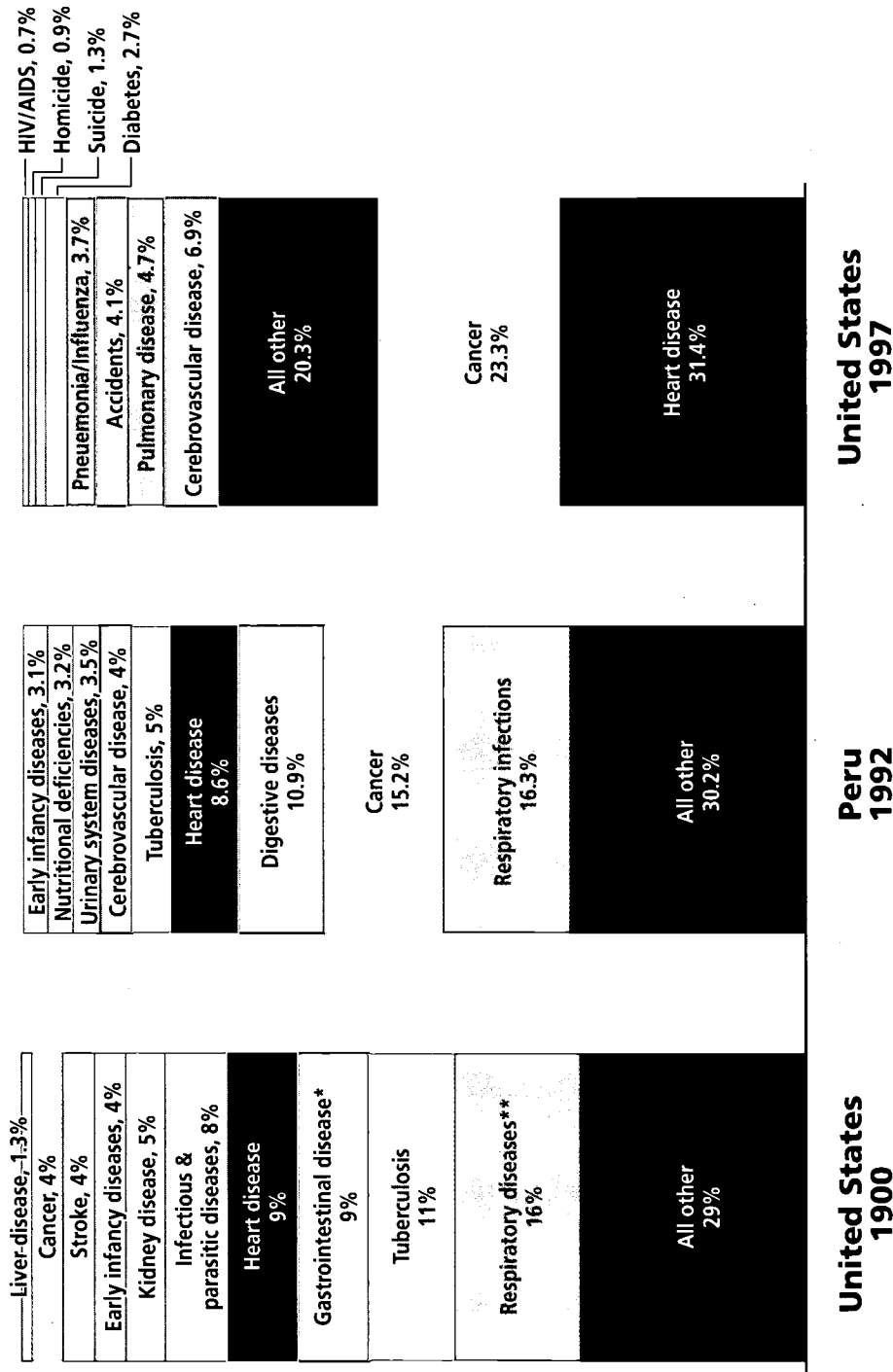
Family Usually two or more persons living together and related by birth, marriage, or adoption. Families may consist of siblings or other relatives as well as married couples and any children they have.

Family planning The conscious effort of couples to regulate the number and spacing of births through artificial and natural methods of contraception.

Literacy The ability to read and write.

Population policy Explicit or implicit measures instituted by a government to influence population size, growth, distribution, or composition.

MAJOR CAUSES OF DEATH IN THE UNITED STATES AND PERU



* Includes diarrhea and inflammation of the stomach and intestines.

** Primarily influenza, bronchitis, and pneumonia.

Source: Pan American Health Organization, *Health in the Americas 2* (1998); and National Center for Health Statistics, *National Vital Statistics Reports 47: 19* (June 30, 1999).

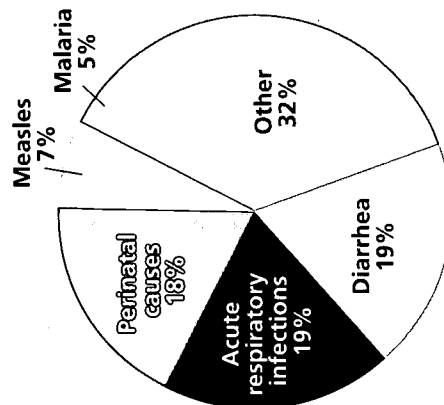
World HEALTH

Declining mortality, not rising fertility, has been the cause of the accelerating pace of world population growth. By attacking the causes of death that have kept population growth low for most of human existence, we have extended life expectancies and multiplied our numbers.

Life expectancy has increased steadily through history. During the Roman Empire, average life expectancy at birth was a brief 22 years. By the Middle Ages it had risen to about 33 years in England, and increased to 43 years by the middle of the 19th century. In the early 1900s, life expectancies in more developed countries ranged from 35 to 55. They have climbed to about 75 years today, and continue to improve. Meanwhile, life expectancy in less developed countries has gradually climbed, rising to about 64 years in 1995.

Initial declines in mortality can be attributed to improvements in public health and living standards that accompanied the Industrial Revolution. Greater declines in the early 20th century were attributable to improvements in medical technology, which led to the control of such infectious diseases as tuberculosis, smallpox, and cholera. Further improvements in life expectancy are anticipated in most countries. In countries where death from infectious diseases is minimal, the improvements will come from the decline in mortality from degenerative diseases such as heart disease and cancer. In some countries, the spread of AIDS and other infectious ailments

Deaths to children under age 5 by main cause, less developed countries, 1995



Source: UNICEF, *The State of the World's Children*, 1998.

is a potential threat to further gains in life expectancy. In Central Africa, where the spread of HIV infection is disproportionately high, life expectancy has begun to decline.

INFANT AND CHILD MORTALITY

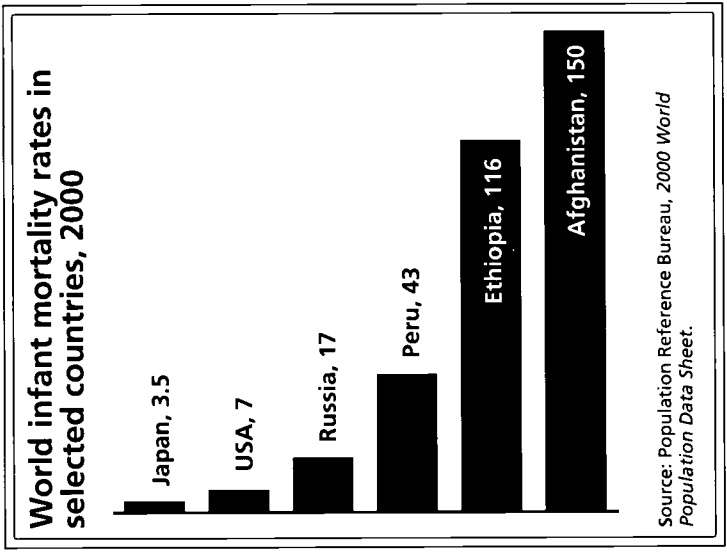
In less developed countries, the chances of dying are greatest at infancy and remain high during the first few years of childhood. A newborn child is fragile and has not developed immunities to common ailments. When

a country has a high rate of infant death, it usually signals high mortality risk from infectious, parasitic, communicable, and other diseases associated with poor sanitary conditions and malnourishment. As a result, the **infant mortality rate (IMR)**, or annual number of deaths of children under age 1 per 1,000 live births, is considered one of the most sensitive measures of a nation's health.

Worldwide about 8 million babies die annually before their first birthday. As the chart "Deaths to children under age 5 by main cause" (at left) indicates, two of the primary causes of infant and child deaths are acute respiratory diseases—such as pneumonia, tuberculosis, and influenza—and diarrhea. Other infectious diseases, such as measles, are also major causes of deaths to infants and children. Death from these conditions is almost unheard of for infants in more developed countries. But in less developed countries where malnourishment weakens small bodies, medical facilities are scarce, and living areas may be unsanitary, infant deaths are common. In 2000, world IMRs range from 2.6 per 1,000 births in Iceland to 157 per 1,000 in Sierra Leone.

As countries develop economically, infant mortality usually declines. The IMR in the United States was probably about 100 in 1900—around the level of the IMRs of some of the poorest countries in the world today. The IMR in the United States has now fallen to below 10. Many countries have even lower

rates, with Japan, Sweden, and Finland heading the list (see chart below, "World infant mortality rates in selected countries").



CAUSES OF DEATH

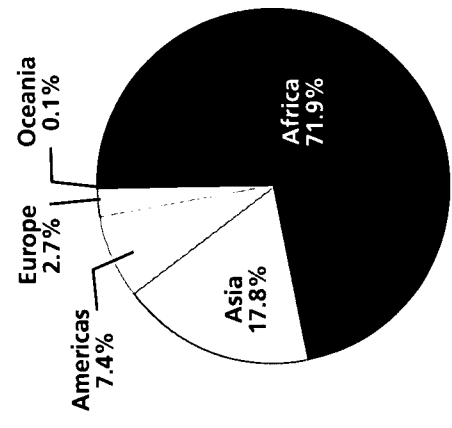
The chart "Major causes of death in the United States and Peru" (p. 26), is useful for developing a better understanding of the changes in mortality in this century. It shows the major causes of death for the United States in 1900 and 1997, and for Peru in 1992. Each column accounts for all causes of death with the top causes specified. Some causes are combined because of their similarities. Data on cause of death should be interpreted cautiously because some causes are more easily identified than others and are reported more completely.

In the United States in 1900, respiratory, infectious and parasitic, and gastrointestinal diseases (including diarrhea) accounted for nearly 40 percent of all deaths. Since then, mortality rates from these diseases have declined sharply. For example, tuberculosis, which accounted for 11 percent of deaths in 1900, accounted for less than 1 percent in 1997. Heart diseases, stroke, and cancer, which account for more than half of all deaths today, caused only about 15 percent of deaths in 1900.

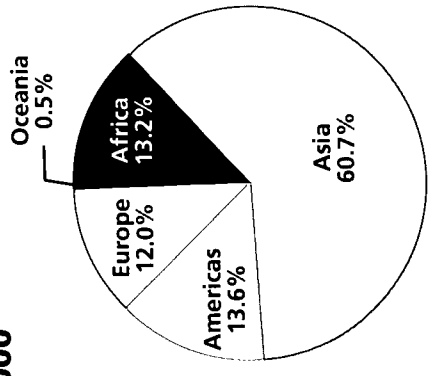
In Peru today, like the United States in 1990, the causes of death are more broadly dispersed. Fifty percent are attributable to the top four causes. Respiratory diseases top the list, with cancer, digestive, and heart diseases also contributing a large share.

As Peru and other countries continue to develop, their causes of death may more closely resemble those of the United States today. As life expectancy improves and the role of infectious, parasitic, and respiratory diseases diminishes, more people will survive to older ages and chronic degenerative diseases such as stroke, cancer, and heart disease will become more common causes of death.

Percent of world's HIV/AIDS cases, 1999



Percent of world population, 2000



Sources: UNAIDS, Report on Global HIV/AIDS Epidemic, 2000; and Population Reference Bureau, 2000 *World Population Data Sheet*.

Q&A

Does AIDS have a significant impact on population growth?

Yes. The high degree of HIV prevalence worldwide has had a dramatic impact on population growth rates. In the early 1990s, few experts predicted the current level of HIV/AIDS cases. In fact, many believed that AIDS would have little or no impact on population growth. At that time, it was difficult to predict or imagine that there would be any country with more than 25 percent of the population ages 15 to 49 infected with HIV.

Since the bubonic plague of the 14th century, no epidemic has had as strong an influence on population growth as HIV/AIDS. The plague, or Black Death, killed an estimated 25 million to 35 million people in Europe alone, a number that represented approximately one-third of its population. According to recent estimates by the Joint United Nations Programme on HIV/AIDS (UNAIDS) and the World Health Organization (WHO), 34.3 million people are living with HIV in 2000. An estimated 18.8 million people have died from AIDS since the beginning of the epidemic.

In some regions, the impact of AIDS has been more pronounced. In sub-Saharan Africa, 24.5 million adults and children are living with HIV/AIDS. This represents 71 percent

of the global HIV/AIDS cases (see chart, "Percent of world's HIV/AIDS cases," p. 28). In 16 countries in this region, at least one out of every 10 adults is HIV positive. In seven of these 16 countries, one adult in five is living with HIV/AIDS.

The AIDS epidemic has nearly erased the improvements in life expectancy achieved in the last 20 years. The UNAIDS/WHO report notes that the most direct impact has been the increase in the overall number of deaths. In South Africa, mortality patterns of adults are much higher than they would have been if AIDS were not so prevalent. HIV/AIDS has also caused a decrease in life expectancy in some places. In Southern Africa, life expectancies in 2010 will fall to levels of only 30 years of age—levels that existed at the beginning of the 20th century. Infant and child mortality rates in some countries are higher than they would have been without AIDS. In Zimbabwe, AIDS causes 70 percent of the deaths among children less than 5 years of age.

HIV/AIDS is also affecting the population composition of many places. The pyramid that is used to model the age and sex structure of a population is projected to look more like a chimney in these countries, as large numbers of adults over 30 die. The base of the pyramid is also less broad, as more women become infected and have fewer children. The base of the pyramid will narrow. In 20 years, there may be more people ages 60 to 80 than ages 40 to 60. The result of a new age and sex structure for some populations will be lower growth rates and possibly declining populations. Global population is still projected to increase despite the disease since birth rates remain high and growth rates in most places continue to be positive. The greatest impact of HIV/AIDS is that the rate of growth is now lower.

TERMS

Infant mortality rate (IMR)

The number of deaths of infants under age 1 per 1,000 live births in a given year.

Life expectancy

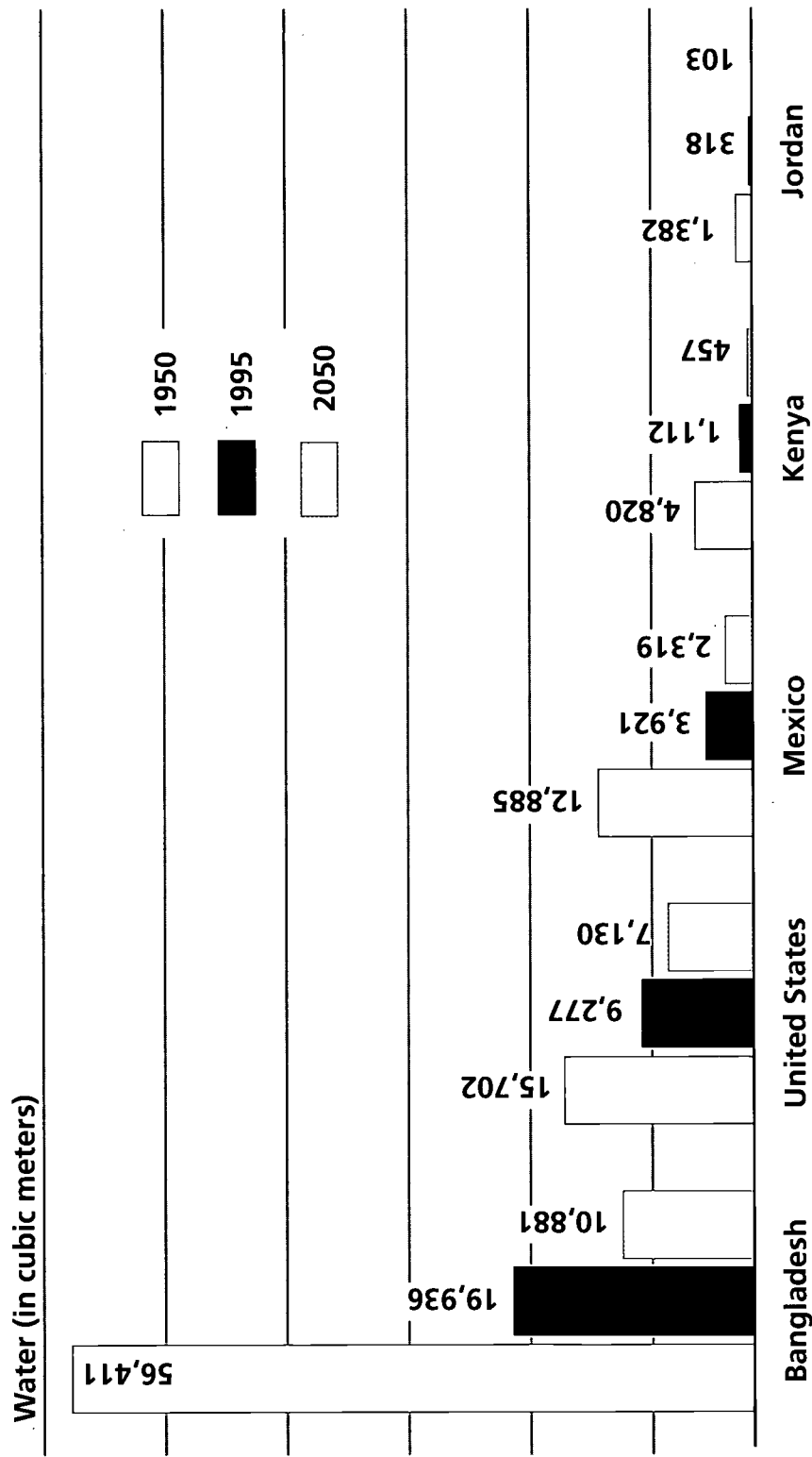
The average number of additional years a person of a given age could

expect to live if current mortality trends were to continue for the rest of that person's life. Most commonly cited as life expectancy at birth.

Mortality Deaths as a component of population change.

Prevalence rate The number of persons having a particular disease at a given point in time per 1,000 population at risk.

PER CAPITA ANNUAL RENEWABLE FRESHWATER AVAILABILITY, 1950, 1995, 2050



Source: Population Action International, *Sustaining Water, Erasing Scarcity*.

ENVIRONMENTAL Relationships

Population growth and distribution have significant roles to play in the sustainability of the world's vast resources. Not only the number of people, but also the lifestyle, consumption patterns, and regions people inhabit and utilize directly affect the environment. The relationship between population growth and environmental degradation may appear to be rather straightforward. More people demand more resources and generate more waste. Clearly one of the challenges of a growing population is that the mere presence of so many people sharing a limited number of resources strains the environment. But when looking at the impact of human activities, the situation is more complicated due to the wide variety of government policies, technologies, and consumption patterns worldwide.

The link between population growth and the environment is found somewhere between the view that population growth is solely responsible for all environmental ills and the view that more people means the development of new technologies to overcome any environmental problems. Most environmentalists agree that population growth is only one of several interacting factors that place pressure on the environment. High levels of consumption and industrialization, inequality in wealth and land distribution, inappropriate government policies, poverty, and inefficient technologies all contribute to environmental decline. In fact,

population may not be a root cause in environmental decline, but rather just one factor among many that exacerbate or multiply the negative effects of other social, economic, and political factors.

Many of the world's population live in poor countries already strained by **food insecurity**; inadequate sanitation, water supplies and housing; and an inability to meet the basic needs of the current population. These same countries are also among the fastest growing places in the world. A large proportion of these populations are supported through subsistence agriculture. As populations grow, competition for fertile land and the use of limited resources increases. The people living in these countries are also moving toward a greater standard of living, perhaps matching the lifestyles of the more developed countries whose current consumption patterns and resource use are not necessarily sustainable.

FOOD PRODUCTION

Meeting the increasing demand for food is probably the most basic challenge and the most salient population and environmental crisis. But the fear that population size would one day exceed the food supply has not proved true. With the development of fertilizers, pesticides, and more efficient farming techniques, crop yields per acre have increased and the amount of land under cultivation has expanded. World food production

has kept pace with population growth. Yet ironically, millions of people do not have enough to eat. Food insecurity is often a result of the unavailability of food, insufficient purchasing power, inappropriate distribution, or inadequate use of food at the household level. Poverty, natural disasters, political violence, and other geopolitical factors create a disproportionate distribution of the world's food.

The gains in food production have been a result of increased yields in fertile lands and new cultivation of marginal lands through industrial agriculture. However, improper use of machinery, chemicals, and extensive irrigation, has resulted in the degradation of land and water resources. Land is made vulnerable to wind and water erosion. Misguided irrigation practices can mean an increase in soil salinity and a greater demand on irreplaceable groundwater. Chemical runoff from fertilizers and pesticides also damage water resources.

Nonindustrial farming or traditional agriculture that continues to intensify in less developed countries often involves the cultivation of fragile soils that are difficult to farm, such as drylands, highlands, and forests. When farmland expands toward fragile lands in order to keep pace with the needs of a growing population in a region, it can lead to **deforestation, erosion, and desertification.**

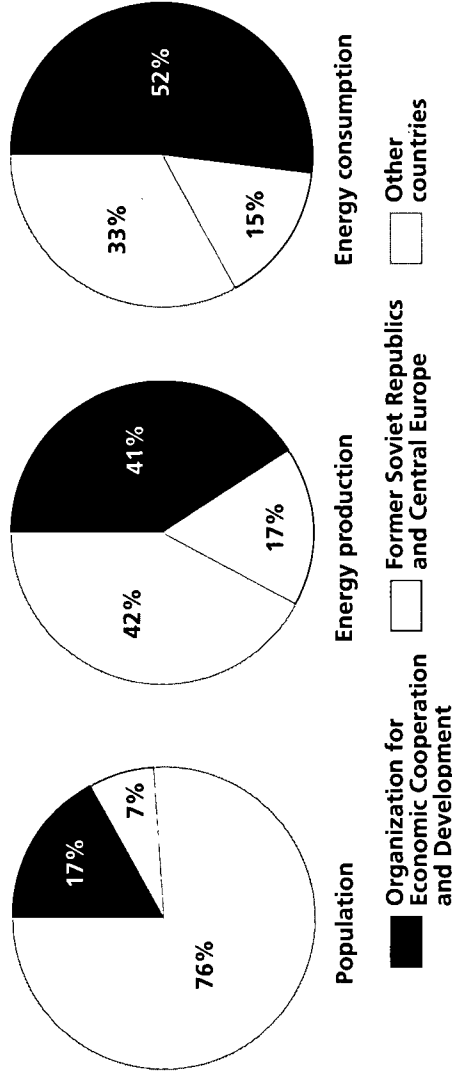
WATER RESOURCE MANAGEMENT

Population growth and distribution have always been linked to the availability of freshwater and the sustainability of renewable water resources. The demand for water has grown significantly over the last 50 years not only because of population growth, but also because of an increase in the uses of water for households, agriculture, and industrial production. Appropriate management of the world's water resources is essential for meeting the demands of a growing population and for expanding water uses. At the same time, we must also prevent the further degradation of our water sources and clean up polluted waters.

A significant number of the world's population lack access to an adequate supply of safe water for household use. In certain less developed countries, more than one-half of the population is without access to safe water. In Haiti, an average of only 37 percent of the population had access to safe water between 1990 and 1997. Water shortages and polluted waters can lead to food insecurity and major health problems among the world's poor.

Because water does not stop at national boundaries, the use of water upstream, pollution, and reduced flows will affect countries downstream. The future of the world's water resources depends on improving management policies and practices globally. Water management institutions must incorporate efficient techniques for using water in industry and agriculture. And most important, management policies must involve the interests of the local community in collaboration with national governments in order to protect water rights and ensure success of programs.

Share of population and energy production and consumption, 1995



Sources: Population Reference Bureau, 2000 World Population Data Sheet; and World Resources Institute, 1998-99 World Resources.

ENERGY

Increased population size and increased economic development has led to the steady rise of global energy use for many decades and is expected to continue. The current distribution of energy consumption does not equal the distribution of global population. The chart "Share of population and energy production and consumption" (above), shows that in 1995, the wealthiest industrialized countries, members of the Organization for Economic Cooperation and Development (OECD), made up only 17 percent of the world's population but consumed more than half of all its energy. These countries also produce 41 percent of the world's energy. In contrast, countries where three-quarters of the population live accounted for only one-third of world energy consumption. Less developed countries are expected to increase their share of world energy use to almost 40 percent in the next 10 years.

The vast majority of energy comes from the burning of **fossil fuels** (oil, natural gas, and coal). The increased use of fossil fuels has a negative effect on the health of the environment in terms of air and water pollution. Air pollution from greater coal use and vehicle exhaust has led to acid rain, which is particularly damaging to forests, lakes, and streams. Rising fossil fuel use also means a greater build-up of carbon dioxide in the atmosphere, higher greenhouse gas emissions, and global warming.

The environmental costs of using fossil fuels have led to efforts to decrease their level of use. Alternative energy sources that are more efficient are being sought, such as renewable resources like hydropower and solar power. Reducing the environmental costs from energy consumption and ensuring there will be an adequate supply of energy for the future involves the careful management of existing and potential resources.

Q&A

Does the relationship between population and the environment vary by region?

Yes. When most people link population growth and environmental degradation, they are usually referring to less developed countries, where most of the world's people live and population growth is high. But environmental problems exist in all countries regardless of the level of development. Most of the environmental degradation in industrialized countries, where only 20 percent of the world's people live, is attributable to high consumption patterns; each individual in an industrialized country exerts more pressure on the environment than perhaps 20 to 30 people in the less developed world. For example, consumption patterns in the United States are indicative of the industrialized world's disproportionate use of global resources. The United States has 5 percent of the world's population, uses an estimated 33 percent of the world's resources, and causes an estimated 33 percent of the world's pollution. According to one estimate, the average American uses at least 30 times the amount of resources as a person living in India.

Experts are attempting to find quantitative ways to consider both consumption patterns and population size when determining

the link between people and the environment. Environmentalists have been using an equation known as I=PAT, which attempts to factor both causes into determining environmental impacts.

$$\text{Environmental Impact} = \text{Population Size} \times \text{Affluence (or Consumption)} \times \text{Technology}$$

The causes of tropical deforestation lie both in population growth in less developed countries and consumption levels in more developed countries. However, for some other environmental problems such as ozone depletion, most of the damage is due to the use of refrigerators and air conditioning systems in industrialized countries, not to population growth.

The adverse environmental impact of consumption patterns in more developed countries is likely to increase as less developed countries further industrialize and adopt consumption patterns similar to those of their more financially wealthy neighbors. Already, elites in the less developed countries mimic the prolific consumption of rich Americans or Europeans. Consumption has surged in China and India since the 1980s and, with the fall of the USSR, Eastern Europeans have increased their appetites for consumer goods. The most rapid growth in energy consumption now occurs in less developed countries because of rising affluence, consumption, and population.

TERMS

Deforestation The loss of trees due to overcutting of forests. One consequence of deforestation is soil erosion, which results in the loss of protective soil cover and the water-holding capacity of the soil.

Desertification The process of grasslands being converted to desert mainly as a result of deforestation, overgrazing, and erosion due to poor land management.

Food insecurity A situation that exists when people lack secure access to sufficient amounts of safe and nutritious food for normal growth and development and an active and healthy life. Food insecurity may be chronic, seasonal, or transitory.

Fossil fuel A group of primary energy sources created from the incomplete biological decomposition of dead organic matter. The fossil fuels include oil, coal, and natural gas and account for about 90 percent of all the energy consumed in the world.

Irrigation The practice of supplying land with water artificially by means of ditches, pipes, or streams.

Renewable water The surface water runoff from local precipitation, the inflow from other regions, and the groundwater recharge that replenishes aquifers.

Subsistence agriculture Farming at a level at which only enough food is produced to meet immediate local needs.

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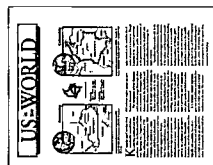
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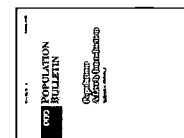


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2001 World Population Data Sheet

of the Population Reference Bureau

Demographic Data and Estimates for the Countries and Regions of the World

BOOK EDITION

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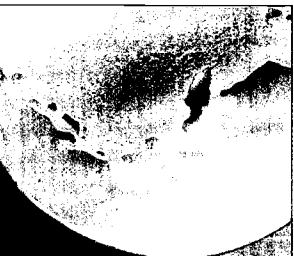
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2001 World Population Data Sheet Highlights



AIDS

With more than 23 million adults living with HIV/AIDS, sub-Saharan Africa is ravaged by this epidemic. An astounding 36 percent of Botswana's 15- to 49-year-olds live with the disease. In Lesotho, Swaziland, and Zimbabwe, approximately 25 percent of adults in these prime ages have HIV. Namibia, South Africa, and Zambia each have prevalence rates of 20 percent among adults ages 15 to 49. In another nine sub-Saharan African countries, more than 10 percent of adults ages 15 to 49 are infected. South Africa has the highest number of adults living with the virus, at about 4.1 million. Nearly 3 million Ethiopian adults live with HIV.

Outside of sub-Saharan Africa, the largest numbers of people infected with HIV or living with AIDS are in India, at 3.5 million. Globally, 15.7 million adults with AIDS are women and 1.3 million are children below the age of 15.

Population Decline in Europe

Many European populations are experiencing more deaths than births annually, a phenomenon that is not occurring in any other world region. Ukraine and Russia have the largest gaps between birth rates and death rates. The population of Ukraine is losing about 340,000 people each year from having more deaths than births and the population of Russia is losing 950,000 people. In the absence of offsetting international migration, the population of these countries will decline in size. In addition to very low birth rates, a chief cause for surplus European deaths is the relatively high proportion of the region's population in the older ages where death rates are higher. Fifteen percent of Europe's population is age 65 or older, compared with 7 percent for the world.

Population Growth in Less Developed Countries

Nearly all of the world's population growth continues to occur in less developed countries. World population increases by about 83 million annually—99 percent of this increase occurs in the less developed countries of Africa, Asia, Latin America and the Caribbean, and Oceania. According to current population projections, only three of the more developed countries, the United States, Russia, and Japan, are expected to remain among the world's most populous by 2025. The United States is expected to remain in third place, but Russia will drop from seventh to ninth, Japan will drop from ninth to eleventh, and Germany will no longer be in the top fifteen.

World's Largest Countries in 2001

Rank	Country	Population (millions)
1	China	1,273
2	India	1,033
3	United States	285
4	Indonesia	206
5	Brazil	172
6	Pakistan	145
7	Russia	144
8	Bangladesh	134
9	Japan	127
10	Nigeria	127
11	Mexico	100
12	Germany	82
13	Vietnam	79
14	Philippines	77
15	Egypt	70

World's Largest Countries in 2025

Rank	Country	Population (millions)
1	China	1,431
2	India	1,363
3	United States	346
4	Indonesia	272
5	Pakistan	252
6	Brazil	219
7	Nigeria	204
8	Bangladesh	181
9	Russia	137
10	Mexico	131
11	Japan	121
12	Ethiopia	118
13	Philippines	108
14	Congo, Democratic Republic of (Zaire)	106
15	Vietnam	104

This year, several significant changes have been made to the Data Sheet.

First, given the rapidly growing importance of HIV/AIDS in both the mortality level and consequences for population projections, for the foreseeable future an annual HIV/AIDS prevalence column will be featured. Demographers once pointed out that population projections rarely, if ever, incorporated any anticipated effects of future epidemics or famines into their projections, but AIDS has changed all that. AIDS has emerged as a variable every bit as important as infant mortality or life expectancy and, of course, affects even those variables.

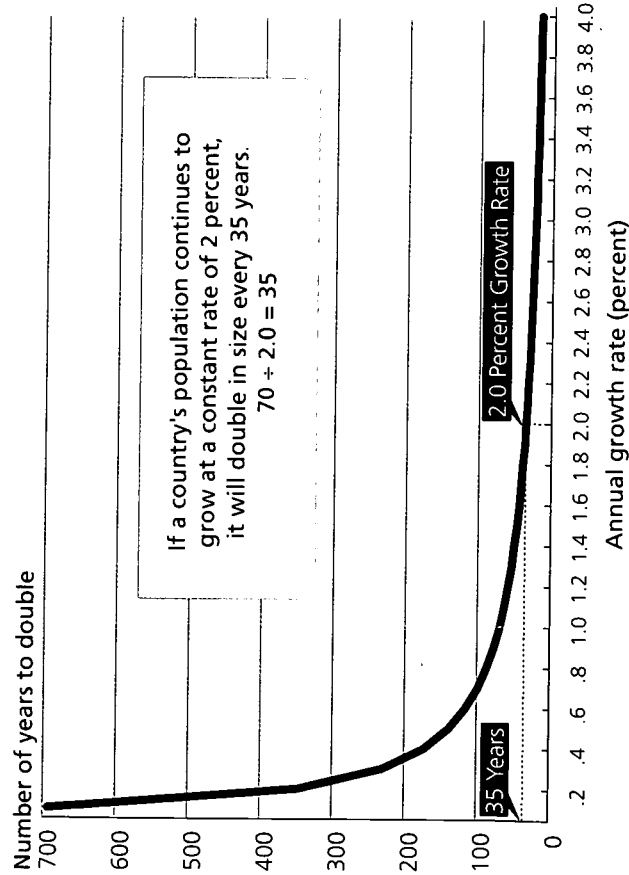
Second, after comments from users, it was decided to remove "doubling time" from the Data Sheet, largely because it has become somewhat irrelevant, particularly in most more developed countries. It is still valuable as a teaching tool to show that a seemingly low population growth rate

such as 3 percent really is quite high. We will continue to feature how doubling time is calculated and its significance in the notes section of the Data Sheet. Doubling time has been replaced by a column showing the percentage growth or decline in population size anticipated from the base year (2001 in this case) to midcentury. That percentage can take into account population change resulting from anticipated trends in fertility, mortality, and migration.

Finally, the column on Gross National Product (now called Gross National Income, or GNI, by the World Bank) has been replaced by GNI adjusted for Purchasing Power Parity or PPP (see accompanying text).

The Value of 'Doubling Time'

The doubling time of a population is simply the number of years it would take for a population to double in size if the present



rate of growth remained unchanged. Used for many years, its primary purpose has been to emphasize just how quickly populations can grow, doubling their numbers geometrically. Today however, many countries, particularly those in Europe, are not expected to double their population numbers any time in the foreseeable future, if ever.

There has also been an understandable tendency for users of the *Data Sheet* to quote doubling times as if they could be used to forecast a country's future population size. Most projections for less developed countries, however, make the assumption that fertility will decline as a natural feature of the demographic transition from high birth and death rates to low ones, so that the rate of growth will, in fact, not remain constant. The rise of AIDS, particularly in sub-Saharan Africa, has also changed the outlook to the point where the value of doubling time is even further diminished.

But the concept still does have value. The power of a growth rate such as 3 percent (giving a doubling time of only 23 years) can be dramatically illustrated. In addition, it serves to remind us that populations do double in size if their growth rates remain constant. Thus, a population of 20 million could grow to 40 million, and so then 80 million, then 160 million, and so on, until the growth curve becomes near vertical. In part, it may have been this realization that caused so many less developed countries to adopt slow-growth policies that have been met with varying degrees of success, as the *Data Sheet* clearly shows.

To calculate doubling time, divide the country's growth rate into the number 70 (actually 69.3 for better accuracy). Thus, a

Comparison of Gross National Income and Gross National Income in PPP, 1999

Country	Gross National Income per capita (US\$)	Gross National Income in Purchasing Power Parity per capita (US\$)
Brazil	4,350	6,840
China	780	3,550
Ethiopia	100	620
India	440	2,230
Indonesia	600	2,660
Japan	32,030	25,170
Nigeria	260	770
Russia	2,250	6,990
Switzerland	38,380	28,760
United States	31,910	31,910

Notes: Gross National Income (GNI) refers to the value of all goods and services produced within a country plus net income earned from abroad by nationals. Gross National Income in Purchasing Power Parity refers to the amount of goods and services that GNI would buy in the United States.

growth rate of 2 percent will double a population in only 35 years, 1 percent in 70 years, and so forth.

Purchasing Power Parity—What Does a Dollar Buy?

Another significant change we are making to the *Data Sheet* this year is replacing the column on Gross National Income (GNI) per capita (formerly called Gross National Product, or GNP, by the World Bank) with one on Gross National Income per capita adjusted for purchasing power parity (PPP). GNI PPP per capita is gross national

(Continued on page 9)

Demographic Data and Estimates for the Countries and Regions of the World

Projected															Area, Density, and Capital City									
Population Mid-2001 (millions)	Births Per 1,000 Pop.	Deaths Per 1,000 Pop.	Rate of Natural Increase (%)	Pop. Change 2001- 2050 (%)	Projected Population (millions)		Infant Mortality Rate ^a	Total Fertility Rate ^b	Percent of Population <15 Age ^c	Life Expectancy at Birth (years)			Data Avail. Code ^d	Percent Urban	Percent of Pop. 15-49 with HIV/AIDS End- 1999	Percent of Women 15-49 Using Contraception* All- Modern Methods	Govt. View of Birth Rate ^e	GNI PPP Per Capita, 1999, (US\$)	Pop. Per Square Mile	Capital City				
					2025	2050				Total	Male	Female												
WORLD	6,137	22	9	1.3	47	7,818	9,036	56	2.8	30	7	67	65	69	46	1.1	60	53	\$6,650	51,789,601	118			
More Developed	1,193	11	10	0.1	4	1,248	1,242	8	1.6	18	14	75	72	79	75	0.3	73	58	20,520	19,814,584	60			
Less Developed	4,944	25	8	1.6	58	6,570	7,794	61	3.2	33	5	64	63	66	40	1.4	57	51	3,300	31,975,017	155			
Less Developed (Excl. China)	3,671	28	9	1.9	75	5,139	6,425	67	3.6	36	4	62	61	64	41	1.9	47	40	3,210	28,278,917	130			
AFRICA	818	38	14	2.4	120	1,268	1,800	88	5.2	43	3	54	52	55	33	6.7	26	19	1,790	11,698,111	70			
Sub-Saharan Africa	673	41	15	2.5	132	1,067	1,560	94	5.6	44	3	51	49	52	30	8.6	19	13	1,370	9,379,573	72			
NORTHERN AFRICA	177	28	7	2.1	72	251	304	58	3.6	37	4	66	64	67	45	0.2	48	41	3,070	3,236,081	54			
Algeria	31.0	25	6	1.9	66	43.2	51.5	55	3.1	39	4	69	68	70	8	49	0.1	52	—	H	4,840	919,591	34	Algiers
Egypt	69.8	28	7	2.1	64	96.2	114.7	44	3.5	36	4	66	65	68	8	43	2	56	54	H	3,460	386,660	181	Cairo
Libya	5.2	28	4	2.4	106	8.3	10.8	33	3.9	37	4	75	73	77	8	86	0.1	49	26	S	—	679,359	8	Tripoli
Morocco	29.2	26	6	2.0	66	40.5	48.4	53	3.4	33	5	69	67	71	8	55	2	58	49	H	3,320	172,413	169	Rabat
Sudan	31.8	34	11	2.4	100	49.6	63.5	74	4.9	43	3	56	55	57	7	10	7	60	49	H	—	967,494	33	Khartoum
Tunisia	9.7	19	6	1.3	46	12.5	14.2	28	2.3	31	6	72	70	74	8	62	2	60	49	H	5,700	63,170	154	Tunis
Western Sahara	0.3	46	17	2.9	128	0.4	0.6	140	6.8	—	—	—	—	—	D	95	—	—	—	—	—	97,344	3	El Aaiun
WESTERN AFRICA	240	42	15	2.7	142	308	581	88	9.8	45	3	51	50	52	35	4.6	15	8	1,000	2,370,015	101			
Benin	6.6	45	15	3.0	174	11.7	18.1	94	6.3	48	2	50	49	51	8	39	2.5	16	3	S	920	43,483	152	Porto-Novo
Burkina Faso	12.3	47	17	3.0	180	21.6	34.3	105	6.8	48	3	47	47	47	8	15	6.4	12	5	H	960	105,792	116	Ouagadougou
Cape Verde	0.4	37	7	3.0	-6	0.5	0.4	31	4.0	43	7	68	65	72	8	53	—	53	46	H	4,450	1,556	287	Cidade de Praia
Côte d'Ivoire	16.4	36	16	2.0	118	25.6	35.7	112	5.2	42	2	46	45	47	8	46	10.8	15	7	H	1,540	124,502	132	Abidjan
Gambia	1.4	43	14	3.0	195	2.7	4.2	82	5.9	46	3	52	51	54	7	37	2.0	15	7	H	1,550	4,363	323	Banjul
Ghana	19.9	32	10	2.2	61	26.5	32.0	56	4.3	43	3	58	56	59	7	37	3.6	22	13	H	1,850	92,100	216	Accra
Guinea	7.6	41	19	2.3	138	12.6	18.1	98	5.5	44	3	45	43	47	8	26	1.5	6	4	H	1,870	94,927	80	Conakry
Guinea-Bissau	1.2	42	20	2.2	167	2.2	3.3	131	5.8	44	3	45	44	46	7	22	2.5	—	—	H	630	13,946	88	Bissau
Liberia	3.2	49	17	3.1	210	6.0	10.0	139	6.6	43	3	50	49	52	8	45	2.8	—	—	H	—	43,000	75	Monrovia
Mali	11.0	50	20	3.0	230	21.6	36.4	123	7.0	47	3	46	45	47	9	26	2.0	7	5	H	740	478,838	23	Bamako
Mauritania	2.7	43	15	2.8	208	5.4	8.5	106	6.0	44	2	51	49	52	10	54	0.5	4	1	S	1,550	395,954	7	Nouakchott
Niger	10.4	53	24	2.9	175	18.8	28.5	123	7.5	50	2	41	41	41	11	17	1.4	8	5	H	740	489,189	21	Niamey
Nigeria	126.6	41	14	2.8	140	204.5	303.6	75	5.8	44	3	52	52	53	12	36	5.1	15	9	H	770	356,668	355	Abuja
Senegal	9.7	41	13	2.8	135	16.5	22.7	68	5.7	44	3	52	51	54	13	43	1.8	13	8	H	1,400	75,954	127	Dakar
Sierra Leone	5.4	47	20	2.6	189	9.9	15.7	153	6.3	45	3	45	42	47	14	37	3.0	—	—	H	440	27,699	196	Freetown
Togo	5.2	40	11	2.9	89	7.6	9.7	80	5.8	47	2	55	53	58	15	31	6.0	24	7	S	1,380	21,927	235	Lomé

Demographic Data and Estimates for the Countries and Regions of the World

AFRICA

Area, Density, and Capital City																									
Population Mid-2001 (millions)	Births Per 1,000 Pop.	Deaths Per 1,000 Pop.	Rate of Natural Increase (%)	Projected Pop. Change 2001- 2050 (%)	Projected Population (millions)		Infant Mortality Rate ^a	Total Fertility Rate ^b	Percent of Population of Age <15	Life Expectancy at Birth (years)	Data Avail. Code ^c	Percent Urban	HIV/AIDS End- 1999	Percent Pop. 15-49 with HIV/AIDS	Percent of Married Women 15-49 Using Contraception [*]	Govt. View of Birth Rate ^d	GNI PPP Per Capita, 1999, (US\$)	Area, Density, and Capital City							
					2025	2050												Area of Countries (square miles)	Pop. Per Square Mile	Capital City					
EASTERN AFRICA																									
2592	42	16	2.5	123	303	574	97	5.7	45	50	51	20	11.0	8	21	15	3350	2,453,184	102						
Burundi	6.2	42	17	2.5	158	10.5	16.1	75	6.5	48	3	47	46	47	C	—	H	570	10,745	579	Bujumbura				
Comoros	0.6	47	12	3.5	208	1.1	1.8	91	6.8	46	5	56	54	59	B	29	0.1	21	11	H	1,430	861	692	Moroni	
Djibouti	0.6	43	16	2.7	67	0.8	1.1	117	6.1	43	3	46	44	48	D	83	11.8	—	—	H	—	—	8,958	71	Djibouti
Eritrea	4.3	43	13	3.0	209	8.3	13.3	80	6.0	43	3	55	53	57	C	16	2.9	8	4	H	1,040	45,405	95	Asmara	
Ethiopia	65.4	44	15	2.9	164	117.6	172.7	97	5.9	44	3	52	51	53	B	15	10.6	8	6	H	620	426,371	153	Addis Ababa	
Kenya	29.8	34	14	2.0	26	33.3	37.4	74	4.4	44	3	48	48	49	B	20	14.0	39	32	H	1,010	224,081	133	Nairobi	
Madagascar	16.4	43	13	3.0	186	30.8	47.0	96	5.8	45	3	54	52	56	B	22	0.2	19	10	H	790	226,656	71	Antananarivo	
Malawi	10.5	46	23	2.3	110	17.1	22.2	104	6.4	47	3	39	39	40	B	20	16.0	31	26	H	570	45,745	231	Lilongwe	
Mauritius	1.2	17	7	1.0	24	1.4	1.5	15.6	2.0	26	6	71	67	74	A	43	0.1	75	60	S	8,950	788	1,520	Port Louis	
Mayotte	0.2	41	10	3.1	259	0.4	0.6	75	5.6	47	2	59	57	61	C	—	—	—	—	—	145	1,139	—	Mamoudzou	
Mozambique	19.4	43	22	2.1	18	21.6	22.9	135	5.6	44	3	72	69	76	B	28	13.2	6	5	H	810	309,494	63	Maputo	
Reunion	0.7	20	5	1.5	39	0.9	1.0	8	2.3	27	7	75	70	79	B	73	—	73	67	—	—	969	744	St. Denis	
Rwanda	7.3	39	21	1.8	22	8.0	8.9	107	5.8	44	3	39	39	40	C	5	11.2	13	4	H	880	10,170	719	Kigali	
Seychelles	0.1	18	7	1.1	15	0.1	0.1	10	2.0	29	8	70	67	73	B	63	—	—	—	H	—	174	449	Victoria	
Somalia	7.5	48	19	3.0	240	14.9	25.5	126	7.3	44	3	46	45	48	D	28	—	—	—	S	—	246,201	30	Mogadishu	
Tanzania	36.2	41	13	2.8	144	59.8	88.3	99	5.6	45	3	53	52	54	B	22	8.1	25	17	H	500	364,900	99	Dar-es-Salaam	
Uganda	24.0	48	19	2.9	251	48.0	84.1	97	6.9	51	2	42	42	43	B	15	8.3	15	8	H	1,160	93,066	258	Kampala	
Zambia	9.8	45	22	2.3	108	14.3	20.3	95	6.1	45	2	37	37	38	B	38	20.0	26	14	H	720	290,583	34	Lusaka	
Zimbabwe	11.4	29	20	0.9	-18	9.5	9.3	65	4.0	44	3	40	41	39	B	32	25.1	54	50	H	2,690	150,873	75	Harare	
MIDDLE AFRICA																									
99	46	16	2.9	203	133	300	113	6.6	47	5	43	43	50	33	54.4	10	3	—	2,553,151	39	—	2,553,151	39	—	
Angola	12.3	50	25	2.4	141	20.5	29.6	198	6.9	48	3	38	37	39	D	32	2.8	—	—	S	1,100	481,351	26	Luanda	
Cameroon	15.8	39	12	2.7	119	24.7	34.7	77	5.2	43	3	55	55	56	B	48	7.7	19	7	H	1,490	183,568	86	Yaoundé	
Central African Republic	3.6	38	18	2.0	78	4.9	6.4	98	5.1	44	4	45	43	46	B	39	13.8	15	3	S	1,150	240,533	15	Bangui	
Chad	8.7	49	16	3.3	282	18.2	33.3	103	6.6	48	3	50	48	52	B	21	2.7	4	1	S	840	495,753	18	N'Djamena	
Congo	3.1	46	16	3.0	245	6.3	10.7	105	6.3	43	3	50	47	52	D	41	6.4	—	—	H	540	132,046	24	Brazzaville	
Congo, Dem. Rep. Of	53.6	47	16	3.1	239	106.0	181.9	106	7.0	48	3	48	45	50	D	29	5.1	8	3	S	—	905,351	59	Kinshasa	
Equatorial Guinea	0.5	45	14	3.1	193	0.9	1.4	108	5.9	44	4	50	48	52	D	37	0.5	—	—	S	3,910	10,830	43	Malabo	
Gabon	1.2	32	16	1.6	49	1.4	1.8	57	4.3	40	6	52	51	54	B	73	4.2	33	12	L	5,280	103,347	12	Libreville	
Sao Tome and Principe	0.2	43	8	3.5	204	0.3	0.5	54	6.2	48	4	65	63	66	B	44	—	—	—	H	—	371	445	—	Sao Tome
SOUTHERN AFRICA																									
50	27	14	1.3	-13	42	41	61	3.1	3.1	35	5	52	51	53	50	20.7	53	51	—	—	3,100	1,032,720	49	—	
Botswana	1.6	31	20	1.0	-26	1.2	1.2	60	3.9	41	4	41	41	42	C	49	35.8	42	41	H	6,540	224,606	7	Gaborone	
Lesotho	2.2	33	13	2.0	31	2.4	2.8	84	4.3	40	5	53	52	55	C	16	23.6	23	19	H	2,350	11,718	186	Maseru	
Namibia	1.8	36	17	1.9	37	2.0	2.5	68	5.0	43	4	46	47	45	B	27	19.5	29	26	H	5,580	318,259	6	Windhoek	
South Africa	43.6	25	14	1.2	-25	35.1	32.5	57	2.9	34	5	53	52	54	B	54	19.9	56	55	H	8,710	471,444	92	Pretoria	
Swaziland	1.1	41	20	2.0	84	1.4	2.0	109	5.9	46	3	40	40	41	C	25	25.3	21	19	H	4,380	6,703	165	Mbabane	

Demographic Data and Estimates for the Countries and Regions of the World

Area, Density, and Capital City

AMERICA

	Births				Rate of Change	Projected Pop. 2050	Projected Population		Infant Mortality Rate ^a	Total Fertility Rate ^b	Percent of Population <15	Life Expectancy at Birth (years)			Data Avail. Code ^c	Percent with HIV/AIDS End-1999	Percent of Pop. 15-49 Married	GNI PPP Per Capita, 1999, (US\$)	Area, Density, and Capital City					
	Population Mid-2001 (millions)	Per 1,000 Pop.	Deaths Per 1,000 Pop.	Natural Increase (%)			2025	2050				Total	Male	Female					All Methods	Modern Birth Rate ^d	Govt. View	Area of Countries (square miles)	Pop. Per Square Mile	Capital City
NORTH AMERICA	316	14	9	0.5	43	382	450	7	2.0	21	13	77	74	80	75	0.6	77	70	\$31,260	7,699,508	41			
Canada	31.0	11	8	0.3	18	36.0	36.6	5.5	1.4	19	13	79	76	81	A	78	0.3	80	66	5	25,440	3,849,670	8	Ottawa
United States	284.5	15	9	0.6	45	346.0	413.5	7.1	2.1	21	13	77	74	80	A	75	0.6	76	71	5	31,910	3,717,796	77	Washington, DC
LATIN AMERICA & THE CARIBBEAN	525	24	6	1.7	55	697	815	31	2.8	32	5	71	68	74	74	0.6	70	61	6,460	7,946,684	66			
CENTRAL AMERICA	188	26	5	2.1	65	190	228	30	3.1	36	5	73	70	76	66	0.5	64	56	6,900	9,574,532	144			
Belize	0.3	25	6	1.9	132	0.4	0.6	22	3.2	41	5	72	70	74	B	49	2.0	47	44	5	4,750	8,865	29	Belmopan
Costa Rica	3.7	22	4	1.8	51	5.0	5.6	12	2.6	32	5	77	75	79	B	45	0.5	80	72	5	7,880	19,730	188	San Jose
El Salvador	6.4	30	7	2.3	93	9.3	12.4	30	3.5	36	5	70	67	73	B	58	0.6	60	54	H	4,260	8,124	788	San Salvador
Guatemala	13.0	36	7	2.9	143	22.1	31.5	50	4.8	44	3	66	63	68	B	39	1.4	38	31	H	3,630	42,042	309	Guatemala
Honduras	6.7	33	6	2.8	81	9.8	12.2	42	4.4	43	4	66	64	68	B	46	1.9	50	41	H	2,270	43,278	155	Tegucigalpa
Mexico	99.6	24	5	1.9	50	130.9	149.7	25	2.8	34	5	75	73	78	B	74	0.3	68	59	H	8,070	756,062	132	Mexico City
Nicaragua	5.2	35	6	3.0	122	8.6	11.6	40	4.3	43	3	68	66	70	B	57	0.2	60	57	H	2,060	50,193	104	Managua
Panama	2.9	25	5	2.1	48	3.8	4.3	17	2.6	31	6	74	72	76	C	56	1.5	—	—	S	5,450	29,158	100	Panama City
CARIBBEAN	37	21	8	1.2	36	46	50	42	2.6	30	7	63	66	71	61	2.1	—	—	—	—	90,353	410		
Antigua and Barbuda	0.1	22	6	1.6	3	0.1	0.1	17	2.4	28	8	70	68	72	B	37	—	—	—	S	9,870	170	394	St. John's
Bahamas	0.3	21	5	1.5	46	0.4	0.5	18.4	2.4	31	6	72	70	75	A	84	4.1	—	—	H	15,500	5,359	58	Nassau
Barbados	0.3	14	9	0.5	3	0.3	0.3	14.2	1.6	23	9	73	70	75	A	38	1.2	—	—	S	14,010	166	1,620	Bridgetown
Cuba	11.3	14	7	0.6	-3	11.9	11.0	7	1.6	22	10	75	73	77	C	75	z	—	—	S	—	42,803	264	Havana
Dominica	0.1	16	8	0.8	14	0.1	0.1	16.1	1.8	33	9	73	70	76	A	71	—	—	—	S	5,040	290	262	Roseau
Dominican Republic	8.6	26	5	2.1	74	12.1	14.9	47	3.1	35	5	69	67	71	B	61	2.8	64	59	H	5,210	18,815	456	Santo Domingo
Grenada	0.1	21	8	1.3	-2	0.1	0.1	14	2.4	38	4	65	63	66	B	34	—	54	49	H	6,330	131	678	St. George's
Guadeloupe	0.5	17	6	1.2	23	0.5	0.6	8.4	1.9	25	9	77	73	80	A	48	—	—	—	—	—	660	691	Basse-Terre
Haiti	7.0	33	15	1.7	70	9.6	11.9	80	4.7	43	4	49	47	51	C	35	5.2	28	22	H	1,470	10,714	650	Port-au-Prince
Jamaica	2.6	20	5	1.5	48	3.3	3.9	24	2.4	31	7	71	70	73	B	50	0.7	66	63	H	3,390	4,243	624	Kingston
Martinique	0.4	14	6	0.8	14	0.4	0.4	7	1.8	23	10	79	76	82	C	93	—	—	—	—	—	425	897	Fort-de-France
Netherlands Antilles	0.2	17	6	1.1	13	0.2	0.3	13	2.1	26	7	74	72	76	B	70	—	—	—	—	—	309	722	Willemstad
Puerto Rico	3.9	15	7	0.8	8	4.2	4.2	10.5	1.9	25	10	75	71	80	A	71	—	78	68	—	—	3,456	1,139	San Juan
St. Kitts-Nevis	0.04	20	11	0.9	33	0.05	0.1	24	2.5	31	9	69	66	71	C	43	—	—	—	H	10,400	139	281	Basseterre
Saint Lucia	0.2	19	6	1.3	50	0.2	0.2	14.3	2.1	33	6	71	70	73	A	30	—	—	—	H	5,200	239	656	Castries
St. Vincent & the Grenadines	0.1	19	7	1.2	-19	0.1	0.1	20.4	2.2	32	6	72	70	73	A	44	—	—	—	H	4,990	151	757	Kingstown
Trinidad and Tobago	1.3	14	8	0.7	6	1.4	1.4	17.1	1.7	26	7	71	68	73	A	72	1.1	—	—	H	7,690	1,981	656	Port-of-Spain

Demographic Data and Estimates for the Countries and Regions of the World

Area, Density, and Capital City

Projected Pop. Change 2001-2050 (%)										Projected Population (millions)										Infant Mortality Rate ^a										Total Fertility Rate ^b										Percent of Population of Age										Life Expectancy (at Birth)										Data Avail. Code ^c										Percent of Pop. 15-49										HIV/AIDS End-1999										Contraception* All Modern Methods										Govt. View of Birth Rate										GNI PPP Per Capita, 1999, (US\$)										Area of Countries (square miles)										Pop. Per Square Mile										Capital City																																																	
Rate of Natural Increase										2025										2050										Rate ^a										Rate ^b										<15										65+										Total										Male										Female										Urban										with HIV/AIDS End-1999										Using All Modern Methods										Per Birth Rate										Per Capita, 1999, (US\$)										Area of Countries (square miles)										Pop. Per Square Mile										Capital City																			
Births Per 1,000 Pop.										Deaths Per 1,000 Pop.										Population (millions)										Mid-2001 (millions)										Rate ^a										Rate ^b										<15										65+										Total										Male										Female										Urban										with HIV/AIDS End-1999										Using All Modern Methods										Per Birth Rate										Per Capita, 1999, (US\$)										Area of Countries (square miles)										Pop. Per Square Mile										Capital City									
Rate of Natural Increase										2025										2050										Rate ^a										Rate ^b										<15										65+										Total										Male										Female										Urban										with HIV/AIDS End-1999										Using All Modern Methods										Per Birth Rate										Per Capita, 1999, (US\$)										Area of Countries (square miles)										Pop. Per Square Mile										Capital City																			
Rate of Natural Increase										2025										2050										Rate ^a										Rate ^b										<15										65+										Total										Male										Female										Urban										with HIV/AIDS End-1999										Using All Modern Methods										Per Birth Rate										Per Capita, 1999, (US\$)										Area of Countries (square miles)										Pop. Per Square Mile										Capital City																			
Rate of Natural Increase										2025										2050										Rate ^a										Rate ^b										<15										65+										Total										Male										Female										Urban										with HIV/AIDS End-1999										Using All Modern Methods										Per Birth Rate										Per Capita, 1999, (US\$)										Area of Countries (square miles)										Pop. Per Square Mile										Capital City																			
Rate of Natural Increase										2025										2050										Rate ^a										Rate ^b										<15										65+										Total										Male										Female										Urban										with HIV/AIDS End-1999										Using All Modern Methods										Per Birth Rate										Per Capita, 1999, (US\$)										Area of Countries (square miles)										Pop. Per Square Mile										Capital City																			
Rate of Natural Increase										2025										2050										Rate ^a										Rate ^b										<15										65+										Total										Male										Female										Urban										with HIV/AIDS End-1999										Using All Modern Methods										Per Birth Rate										Per Capita, 1999, (US\$)										Area of Countries (square miles)										Pop. Per Square Mile										Capital City																			
Rate of Natural Increase										2025										2050										Rate ^a										Rate ^b										<15										65+										Total										Male										Female										Urban										with HIV/AIDS End-1999										Using All Modern Methods										Per Birth Rate										Per Capita, 1999, (US\$)										Area of Countries (square miles)										Pop. Per Square Mile										Capital City																			
Rate of Natural Increase										2025										2050										Rate ^a										Rate ^b										<15										65+										Total										Male										Female										Urban										with HIV/AIDS End-1999										Using All Modern Methods										Per Birth Rate										Per Capita, 1999, (US\$)										Area of Countries (square miles)										Pop. Per Square Mile										Capital City																			
Rate of Natural Increase										2025										2050										Rate ^a										Rate ^b										<15										65+										Total										Male										Female										Urban										with HIV/AIDS End-1999										Using All Modern Methods										Per Birth Rate										Per Capita, 1999, (US\$)										Area of Countries (square miles)										Pop. Per Square Mile										Capital City																			
Rate of Natural Increase										2025										2050										Rate ^a										Rate ^b										<15										65+										Total										Male										Female										Urban										with HIV/AIDS End-1999										Using All Modern Methods										Per Birth Rate										Per Capita, 1999, (US\$)										Area of Countries (square miles)										Pop. Per Square Mile										Capital City																			
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Demographic Data and Estimates for the Countries and Regions of the World

Projected													Area, Density, and Capital City											
Population Mid-2001 (millions)	Births Per 1,000 Pop.	Deaths Per 1,000 Pop.	Rate of Natural Increase (%)	Projected Pop. Change 2001- 2050 (%)	Projected Population (millions)		Infant Mortality Rate ^a	Total Fertility Rate ^b	Percent of Population by Age			Life Expectancy at Birth (Years)		Data Avail. Code ^c	Percent Urban	HIV/AIDS End- 1999	Percent Using Contraception ^d All Modern Methods	Govt. View Birth Rate ^e	GNI PPP Per Capita, 1999, (US\$)	Area of Countries (square miles)	Pop. Per Square Mile	Capital City		
					2025	2050			<15	15-64	65+	Total	Male										Female	
ASIA	3,720	22	8	1.4	41	4,714	5,262	55	2.7	30	6	67	65	68		37	0.3	62	57	\$3,930	12,262,691	303		
Asia (Excl. China)	2,447	25	8	1.7	59	3,283	3,893	62	3.2	34	5	64	63	66		38	0.4	51	43	4,130	8,566,591	286		
WESTERN ASIA	192	28	7	2.1	107	299	400	45	3.9	36	5	68	66	69		65	2	50	31	4,810	1,822,873	106		
Armenia	3.8	9	6	0.3	-0	4.1	3.8	16	1.1	24	9	73	71	76	B	67	z	61	22	L	2,360	11,506	330	Yerevan
Azerbaijan	8.1	15	6	0.9	42	9.8	11.5	13	2.0	32	6	72	68	75	B	51	z	—	—	S	2,450	33,436	243	Baku
Bahrain	0.7	21	3	1.9	300	1.7	2.9	9	2.8	31	2	72	70	75	B	88	0.2	62	31	S	—	266	2,688	Manama
Cyprus	0.9	13	8	0.6	10	1.0	1.0	7	1.8	23	10	77	75	79	C	66	0.1	—	—	L	19,080	3,571	247	Nicosia
Georgia	5.5	9	9	0.0	-23	4.8	4.2	18	1.2	20	13	73	69	77	B	56	z	41	20	L	2,540	26,911	203	Tbilisi
Iraq	23.6	37	10	2.7	127	40.3	53.6	92	5.3	42	3	59	58	60	C	68	z	—	—	S	—	169,236	139	Baghdad
Israel	6.4	22	6	1.6	64	8.9	10.6	5.3	3.0	29	10	78	76	80	A	91	0.1	—	—	L	18,070	8,131	791	Jerusalem
Jordan	5.2	27	5	2.2	128	8.7	11.8	31	3.6	40	5	70	69	71	B	79	z	56	39	H	3,880	34,444	150	Amman
Kuwait	2.3	20	2	1.8	181	4.2	6.4	9	4.2	26	1	73	72	73	B	100	0.1	50	41	S	—	6,880	297	Kuwait
Lebanon	4.3	23	7	1.7	35	5.4	5.8	33	2.5	29	7	71	68	73	C	88	0.1	61	37	S	—	4,015	1,061	Beirut
Oman	2.4	39	4	3.5	218	4.9	7.6	18	6.1	41	2	71	69	73	B	72	0.1	24	18	H	—	82,031	29	Muscat
Palestinian Territory	3.3	42	5	3.7	239	7.4	11.2	26	5.9	47	4	72	70	74	B	—	—	51	37	—	—	2,417	1,365	—
Qatar	0.6	31	4	2.7	45	0.8	0.9	10	3.9	27	2	72	69	74	B	91	0.1	43	32	S	—	4,247	139	Doha
Saudi Arabia	21.1	35	6	2.9	185	40.9	60.3	21	5.7	43	2	67	66	69	B	83	z	32	29	S	11,050	829,996	25	Riyadh
Syria	17.1	31	6	2.6	106	27.1	35.2	24	4.1	41	3	70	70	70	B	50	z	49	32	S	3,450	71,498	231	Damascus
Turkey	66.3	22	7	1.5	47	85.2	97.2	35	2.5	30	6	69	67	71	B	66	z	64	38	H	6,440	299,158	221	Ankara
United Arab Emirates	3.3	18	4	1.4	54	4.5	5.1	19	3.5	26	1	74	71	76	B	84	0.2	28	24	S	—	32,278	103	Abu Dhabi
Yemen	18.0	44	11	3.3	295	39.6	71.1	75	7.2	48	3	59	57	61	B	26	z	21	10	H	730	203,849	88	Sana'a
SOUTH CENTRAL ASIA	1,508	27	9	1.8	66	2,061	2,508	72	3.4	37	4	61	60	62		30	0.5	47	40	2,250	4,157,320	382		
Afghanistan	26.8	43	19	2.4	151	45.9	67.2	154	6.0	43	3	45	46	44	D	22	z	—	—	H	—	251,772	106	Kabul
Bangladesh	133.5	28	8	2.0	56	180.5	208.6	66	3.3	40	3	59	59	59	B	21	z	54	43	H	1,530	55,598	2,401	Dhaka
Bhutan	0.9	40	9	3.1	127	1.4	2.0	71	5.6	42	4	66	66	66	D	15	z	—	8	H	1,260	18,147	50	Thimphu
India	1,033.0	26	9	1.7	58	1,363.0	1,628.0	70	3.2	36	4	61	60	61	B	28	0.7	48	43	H	2,230	1,269,340	814	New Delhi
Iran	66.1	18	6	1.2	52	88.4	100.2	30	2.6	36	5	70	69	71	B	64	z	73	55	H	5,520	630,575	108	Tehran
Kazakhstan	14.8	15	10	0.5	-5	14.7	14.0	20	1.8	28	7	66	60	71	B	56	z	66	53	L	4,790	1,049,151	14	Astana
Kyrgyzstan	5.0	20	7	1.3	52	6.5	7.5	23	2.4	35	5	69	65	72	B	35	z	60	49	S	2,420	76,641	65	Bishkek

Demographic Data and Estimates for the Countries and Regions of the World

	Area of Countries (square miles)	Pop. Per Square Mile	Capital City
Algeria	919,580	26	Algiers
Burkina Faso	274,200	50	Ouagadougou
Cote d'Ivoire	322,462	75	Abidjan
Ghana	238,381	100	Akran
Mali	1,246,700	16	Bamako
Niger	1,267,000	13	Niamey
Togo	56,783	120	Lome
Zambia	294,375	22	Lusaka



Demographic Data and Estimates for the Countries and Regions of the World

Projected Pop. Change															Area, Density, and Capital City										
Population Mid-2001 (millions)	Births Per 1,000 Pop.		Deaths Per 1,000 Pop.		Rate of Natural Increase (%)	Projected Population 2050 (millions)	Infant Mortality Rate ^a	Total Fertility Rate ^b		Percent of Population of Age		Life Expectancy at Birth (years)		Data Avail.	Percent Urban	HIV/AIDS End-1999	Percent of Pop. 15-49 with Contraception* All Modern Methods	Govt. View of Birth	GNI PPP Per Capita, 1999, (US\$)	Area of Countries (square miles)	Pop. Per Square Mile	Capital City			
	2025	2050	2025	2050				<15	65+	Total	Male	Female													
EUROPE	727	10	11	-0.1	-9	717	662	9	1.4	18	15	74	70	78	73	0.3	75	54	\$14,970	8,875,867	82				
NORTHERN EUROPE	96	10	10	0.1	5	102	100	5	1.6	19	15	77	74	80	83	0.1	78	—	20,430	675,793	142				
Denmark	5.4	13	11	0.2	16	5.8	6.2	4.2	1.7	18	15	76	74	79	A	72	0.2	—	5	25,600	16,637	322	Copenhagen		
Estonia	1.4	9	13	-0.4	-36	1.2	0.9	10	1.3	18	14	71	65	76	B	69	z	70	56	L	8,190	17,413	78	Tallinn	
Finland	5.2	11	10	0.2	-8	5.3	4.8	3.6	1.7	18	15	77	74	81	A	60	0.1	79	—	5	22,600	130,560	40	Helsinki	
Iceland	0.3	15	7	0.8	18	0.3	0.3	2.4	2.0	23	12	79	78	81	A	93	0.1	—	—	5	27,210	39,768	7	Reykjavik	
Ireland	3.8	14	9	0.6	18	4.5	4.5	5.5	1.9	22	11	77	74	79	A	58	0.1	—	—	5	22,460	27,135	142	Dublin	
Latvia	2.4	8	14	-0.6	-25	2.2	1.8	11	1.2	18	15	71	65	76	B	69	0.1	85	51	L	6,220	24,942	95	Riga	
Lithuania	3.7	9	11	-0.1	-16	3.5	3.1	9	1.3	20	13	73	67	77	B	68	z	66	25	L	6,490	25,174	147	Vilnius	
Norway	4.5	13	10	0.3	15	5.0	5.2	3.9	1.8	20	15	78	76	81	A	74	0.1	—	—	5	28,140	125,050	36	Oslo	
Sweden	8.9	10	11	-0.0	7	9.4	9.5	3.4	1.5	19	17	80	77	82	A	84	0.1	—	—	5	22,150	173,730	51	Stockholm	
United Kingdom	60.0	12	11	0.1	7	64.1	64.2	5.7	1.7	19	16	77	75	80	A	90	0.1	72	68	S	22,220	94,548	635	London	
WESTERN EUROPE	184	10	10	0.1	-2	189	180	5	1.6	17	16	78	75	80	79	0.2	80	—	23,840	427,702	429				
Austria	8.1	10	9	0.0	1	8.3	8.2	4.8	1.3	17	15	78	75	81	A	65	0.2	68	53	L	24,600	32,378	251	Vienna	
Belgium	10.3	11	10	0.1	-3	10.3	10.0	5.3	1.6	18	17	78	75	81	A	97	0.2	84	74	S	25,710	11,787	872	Brussels	
France	59.2	13	9	0.4	10	64.2	65.1	4.4	1.9	19	16	79	75	83	A	74	0.4	80	—	L	23,020	212,934	278	Paris	
Germany	82.2	9	10	-0.1	-14	80.0	70.3	4.4	1.3	16	16	78	74	81	A	86	0.1	85	79	L	23,510	137,830	597	Berlin	
Liechtenstein	0.03	12	7	0.6	18	0.04	0.04	7.9	1.4	19	10	—	—	—	A	23	—	—	—	5	—	62	534	Vaduz	
Luxembourg	0.4	13	9	0.4	33	0.6	0.6	4.7	1.7	19	14	78	75	81	A	88	0.2	—	—	L	41,230	999	446	Luxembourg	
Monaco	0.03	20	17	0.3	15	0.04	0.04	3.8	—	15	23	—	—	—	D	100	—	—	—	5	—	1	45,333	—	
Netherlands	16.0	13	9	0.4	12	17.7	18.0	5.2	1.7	19	14	78	75	81	A	62	0.2	74	71	S	24,410	15,768	1,018	Amsterdam	
Switzerland	7.2	11	9	0.2	2	7.6	7.4	4.6	1.5	18	15	80	77	83	A	68	0.5	82	—	L	28,760	15,942	453	Bern	
EASTERN EUROPE	308	9	14	-0.5	-14	287	259	14	1.2	18	13	68	63	74	68	0.3	63	40	6,770	7,264,085	42				
Belarus	10.0	9	14	-0.4	-15	9.4	8.5	9	1.3	19	13	68	62	74	B	70	0.3	50	42	L	6,880	80,154	125	Minsk	
Bulgaria	8.1	9	14	-0.5	-35	6.6	5.3	14.9	1.2	16	16	72	68	75	A	68	z	—	—	L	5,070	42,822	190	Sofia	
Czech Republic	10.3	9	11	-0.2	-9	10.3	9.4	4.1	1.1	17	14	75	71	78	A	77	z	70	45	L	12,840	30,448	337	Prague	
Hungary	10.0	10	14	-0.4	-19	9.2	8.0	9.2	1.3	17	15	71	66	75	A	64	0.1	73	68	L	11,050	35,919	278	Budapest	
Moldova	4.3	11	11	-0.1	-0	4.5	4.2	18	1.4	24	9	68	64	72	B	46	0.2	74	50	S	2,100	13,012	328	Chisinau	
Poland	38.6	10	10	0.0	-12	38.6	33.9	9.2	1.4	20	12	73	68	77	B	62	0.1	76	12	L	8,390	124,807	310	Warsaw	



EUROPE

Demographic Data and Estimates for the Countries and Regions of the World

	Projected Pop.				Rate of Natural Increase (%)	Births Per 1,000 Pop.	Deaths Per 1,000 Pop.	Population Mid-2001 (millions)	Change 2001-2050 (%)	Projected Population (millions)		Infant Mortality Rate ^a	Total Fertility Rate ^b	Percent of Population of Age			Life Expectancy at Birth (years)			Data Avail. Code ^c	Percent Urban	HIV/AIDS End-1999	Percent of Pop. 15-49 with Contraception [*] All Modern Methods		Govt. View of Birth Methods Rated ^d	GNI PPP Per Capita, 1999, (US\$)	Area, Density, and Capital City		
	2025	2050	<15	15-64						65+	Total			Male	Female	Percent of Pop. 15-49 with HIV/AIDS End-1999	Married Women Using Contraception [*] All Modern Methods	Per Capita, 1999, (US\$)	Area of Countries (square miles)				Pop. Per Square Mile	Capital City					
Romania	22.4	10	12	-0.1	-14	21.6	19.3	18.6	1.3	18	13	71	67	74	A	55	z	64	30	L	\$5,970	92,042	243	Bucharest					
Russia	144.4	9	15	-0.7	-12	136.9	127.7	16	1.2	18	13	66	59	72	B	73	0.2	67	49	L	6,990	6,592,819	22	Moscow					
Slovakia	5.4	10	10	0.0	-13	5.2	4.7	8.6	1.3	20	11	73	69	77	A	57	z	74	41	L	10,430	18,923	286	Bratislava					
Ukraine	49.1	8	15	-0.7	-22	45.1	38.4	15	1.1	18	14	68	63	74	B	68	1.0	67	37	L	3,360	233,089	211	Kiev					
SOUTHERN EUROPE	145	10	10	0.0	-16	139	122	7	1.3	16	16	77	74	80		70	0.4	=	=		16,520	503,387	283						
Albania	3.4	17	5	1.2	51	4.5	5.2	12	2.8	33	6	72	69	75	8	46	z	—	—	S	3,240	11,100	310	Tirana					
Andorra	0.1	13	4	0.9	118	0.1	0.1	1	1.2	15	12	—	—	—	C	93	—	—	—	S	—	174	380	Andorra la Vella					
Bosnia-Herzegovina	3.4	12	8	0.4	-1	3.6	3.4	11	1.6	20	8	68	65	72	D	40	z	—	—	L	—	19,741	173	Sarajevo					
Croatia	4.7	10	11	-0.2	-16	4.4	3.9	7.7	1.4	20	12	74	70	77	A	54	z	—	—	L	7,260	21,830	197	Zagreb					
Greece	10.9	10	10	-0.0	-11	10.4	9.7	5.9	1.3	15	17	78	76	81	A	59	0.2	—	—	L	15,800	50,950	214	Athens					
Italy	57.8	9	10	-0.0	-20	55.0	46.0	5.2	1.3	14	18	79	76	82	A	90	0.4	91	56	L	22,000	116,320	497	Rome					
Macedonia ^f	2.0	14	8	0.5	3	2.2	2.1	14.9	1.9	23	10	73	70	75	A	60	z	—	—	H	4,590	9,927	205	Skopje					
Malta	0.4	11	8	0.3	11	0.4	0.4	7.2	1.7	21	12	77	74	80	B	91	0.1	86	43	S	—	124	3,157	Valletta					
Portugal	10.0	12	11	0.1	-18	9.3	8.2	5.6	1.5	17	15	76	72	79	A	48	0.7	—	—	L	15,860	35,514	282	Lisbon					
San Marino	0.03	12	8	0.4	11	0.03	0.03	3.3	1.3	15	16	80	76	83	C	89	—	—	—	S	—	23	1,166	San Marino					
Slovenia	2.0	9	10	-0.1	-15	2.0	1.7	4.2	1.2	16	14	76	72	79	A	50	z	84	54	S	16,050	7,819	256	Ljubljana					
Spain	39.8	10	9	0.0	-23	36.7	30.8	4.9	1.2	15	17	78	74	82	A	64	0.6	72	71	L	17,850	195,363	204	Madrid					
Yugoslavia	10.7	12	11	0.1	-4	10.7	10.2	13	1.6	21	13	72	70	75	D	52	0.1	—	—	S	—	39,448	270	Belgrade					

New Data Column Features

(Continued from page 1)

income in purchasing power parity divided by midyear population.

GNI is the total value of all goods and services produced within a country plus net income earned abroad by nationals. GNI PPP refers to gross national income converted to "international" dollars using a purchasing power parity conversion factor. Inter-national dollars indicate the amount of goods or services one could buy in the United States with a given amount of money. GNI PPP provides an indicator of the welfare of people that is comparable across

countries free of price and exchange rate distortions that occur when GNI is converted using market exchange rates.

Many interesting comparisons result from the use of PPP. In India, for example, GNI per capita is a low US\$440, but, when adjusted for purchasing power, it rises considerably to US\$2,230, a result of the lower cost of goods and services in India relative to the United States. In other words, US\$440 in India would buy purchases worth US\$2,230 in the United States. GNI PPP is nearly always higher

than the GNI in less developed countries. However, Japan and many countries in western Europe have higher costs of living than in the United States. As a result, their GNI PPP is lower than GNI converted at market exchange rates. Note that because the U.S. dollar is the standard currency on which PPP is based, GNI and GNI PPP for the United States are the same value in the table on page 1.

One caveat is that GNI data should not be confused with "per capita income," or personal money income earned through

employment or other means. GNI does not necessarily reflect the amount of money that people have to spend because some of this income is paid in taxes or otherwise unavailable.

The estimates of GNI PPP used here are from the World Bank and are regularly published in the annual *World Bank Atlas* and *World Development Indicators*. While no measure of economic well-being is perfect, these PPP estimates should help make better country-to-country comparisons of people's economic welfare.

Knowledge, Notes, Sources, and Definitions

Acknowledgments

The authors gratefully acknowledge the assistance and cooperation of staff members of the International Programs Center of the U.S. Census Bureau; the Population Division and the Statistics Division of the United Nations (UN); the Population and Migration Division of the Council of Europe; the Institut national d'études démographiques (INED), Paris; the World Bank; and Ralf Ulrich, CEO, Eridion GmbH, Germany, in the preparation of this year's *Data Sheet*. Suzanne Baker, former PRB Policy Fellow, produced many of the population projections in this year's *Data Sheet*.

Notes

(—) indicates data unavailable or inapplicable

z=Less than 0.5 percent

^a Infant deaths per 1,000 live births. Rates shown with decimals indicate national statistics reported as completely registered, while those without are estimates from the sources cited on reverse. Rates shown in *italic* are based upon less than 50 annual infant deaths and, as a result, are subject to considerable yearly variability.

^b Average number of children born to a woman during her lifetime

^c A=complete data ... D=little or no data

^d H=too high; S=satisfactory; L=too low

^e Special Administrative Region

^f The former Yugoslav Republic

*Data prior to 1995 are shown in *italics*.

The *Data Sheet* lists all geopolitical entities with

populations of 150,000 or more and all members of the UN. These include sovereign states, dependencies, overseas departments, and some territories whose status or boundaries may be undetermined or in dispute.

More developed regions, following the UN classification, comprise all of Europe and North America, plus Australia, Japan, and New Zealand. All other regions and countries are classified as **less developed**.

Country regional designations also follow UN practice. As a result, North America does not include countries of Latin America classified as less developed.

World and Regional Totals: Regional population

totals are independently rounded and include small countries or areas not shown. Regional and world rates and percentages are weighted averages of countries for which data are available; regional averages are shown when data or estimates are available for at least three-quarters of the region's population.

Sub-Saharan Africa: All countries of Africa except the Northern African countries of Algeria, Egypt, Libya, Morocco, Tunisia, and Western Sahara.

World Population Data Sheets from different years should **not be used as a time series**. Fluctuations in values from year to year often reflect revisions based on new data or estimates rather than actual changes in levels. Additional information on likely trends and consistent time series can be obtained from PRB, and are also available in UN and U.S. Census Bureau publications.

Sources

The rates and figures are primarily compiled from the following sources: official country statistical yearbooks and bulletins; United Nations *Demographic Yearbook*, 1999 (forthcoming) and *Population and Vital Statistics Report, Data Available as of 1 April 2001* (forthcoming) of the UN Statistics Division; *World Population Prospects: The 2000 Revision* of the UN Population Division; the UN Statistical Library; *Recent Demographic Developments in Europe, 2000* of the Council of Europe; *Population 55:4-5 (INED) La conjoncture démographique*, by Jean-Paul Sardon; and the data files and library resources of the International Programs Center, U.S. Census Bureau. Other sources include recent demographic surveys such as the Demographic and Health Surveys, Reproductive Health Surveys, special studies, and direct communication with demographers and statistical bureaus in the United States and abroad. Specific data sources may be obtained by contacting the authors of the *2001 World Population Data Sheet*.

For countries with complete registration of births and deaths, rates are those most recently reported. For more developed countries, nearly all vital rates refer to 1999 or 2000, and for less developed countries, for some point in the late 1990s.

Definitions**Mid-2001 Population**

Estimates are based on a recent census, official national data, or UN and U.S. Census Bureau projections. The effects of refugee movements, large numbers of foreign workers, and population shifts due to contemporary political events are taken into account to the extent possible.

Birth and Death Rate

The annual number of births and deaths per 1,000 total population. These rates are often referred to as "crude rates" since they do not take a population's age structure into account. Thus, crude death rates in more developed countries, with a relatively large proportion of high-mortality older population, are often higher than those in less developed countries with lower life expectancy.

Rate of Natural Increase (RNI)

The birth rate minus the death rate, implying the annual rate of population growth without regard for migration. Expressed as a percentage.

Projected Population 2025 and 2050

Projected populations based upon reasonable assumptions on the future course of fertility, mortality, and migration. Projections are based upon official country projections, series issued by the UN or the U.S. Census Bureau, or PRB projections.

Infant Mortality Rate

The annual number of deaths of infants under age 1 year per 1,000 live births. Rates shown with decimals indicate national statistics reported as completely registered, while those without are estimates from the sources cited above. Rates shown in *italic* are based upon less than 50 annual infant deaths and, as a result, are subject to considerable yearly variability.

Total Fertility Rate (TFR)

The average number of children a woman would have assuming that current age-specific birth rates remain constant throughout her childbearing years (usually considered to be ages 15 to 49).

Population Under Age 15/Age 65+

The percentage of the total population in these ages, which are often considered the "dependent ages."

Life Expectancy at Birth

The average number of years a newborn infant can expect to live under *current* mortality levels.

Data Availability Code

Provides a general indication of data availability. An "A" indicates a country with both complete vital statistics (birth and death data) and either a national-level census within 10 years or a continuous population register. If a country has complete vital statistics or a continuous population register and a national-level census within 15 years, they are rated "B." Also rated "B" are countries that have one of the three sources necessary for an "A" plus either a usable national survey or a sample registration system within 10 years. "C" indicates that at least a census (within 15 years), a survey (within 10 years), or sample registration system is available. "D" indicates that little or no reliable demographic information is available and that estimates are based on fragmentary data or demographic models. Countries whose demographic situations have been seriously disrupted and for which there are few recent data are also coded "D." There can be considerable variation in the quality of data within the same category.

Percent Urban

Percentage of the total population living in areas termed "urban" by that country. Typically, the population living in towns of 2,000 or more or in national and provincial capitals is classified "urban."

Percent of Adult Population Ages 15 to 49 With HIV/AIDS

The estimated percentage of adults with HIV/AIDS at the end of 1999. These data are compiled by UNAIDS and the World Health Organization.

Contraceptive Use

The percentage of currently married or "in-union" women of reproductive age who are currently using any form of contraception.

"Modern" methods include clinic and supply methods such as the pill, IUD, condom, and sterilization. Data are from the most recent available national-level surveys, such as the Demographic and Health Survey, Reproductive Health Survey programs, and the UN Population Division *Survey Levels and Trends of Contraceptive Use as Assessed in 1998*. Other sources include direct communication with national statistical organizations and the databases of the United Nations Population Division and the U.S. Census Bureau. Data refer to some point in the 1990s. Data prior to 1995 are shown in *italics*.

Government View of Current Birth Rate

This population policy indicator presents the officially stated position of country governments on the level of the national birth rate. Most indicators are from the UN Population Division, *Global Population Policy Data Base, 1999*.

GNI PPP Per Capita, 1999 (US\$)

GNI PPP per capita is Gross National Income in purchasing power parity (PPP) divided by midyear population. GNI PPP refers to Gross National Income converted to "international" dollars using a purchasing power parity conversion factor. International dollars indicate the amount of goods and services one could buy in the United States with a given amount of money.

out the Population Reference Bureau

Founded in 1929, the Population Reference Bureau is the leader in providing timely, objective information on U.S. and international population trends and their implications. PRB informs policymakers, educators, the media, and concerned citizens working in the public interest around the world. PRB is a nonprofit, nonadvocacy organization. Our efforts are supported by government contracts, foundation grants, individual and corporate contributions, and the sale of publications. PRB is governed by a Board of Trustees representing diverse community and professional interests.

PRB gathers, interprets, and disseminates population information through a broad range of activities:

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We produce a large number of publications for policymakers, educators, journalists, and many other nontechnical audiences. PRB publications include the *Population Today* newsletter, the quarterly *Population Bulletin*, the annual *World Population Data Sheet*, and *PRB Reports on America*. PRB also produces specialized publications covering population and public policy issues in the United States and in other countries.

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PRB provides technical support to government institutions and private organizations. We help countries increase awareness and understanding of population issues.

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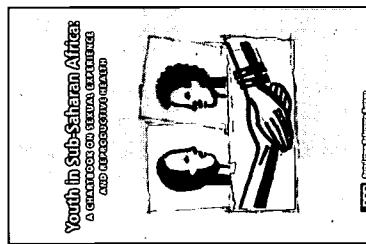
www.popnet.org
The directory for global
population information



www.popplanet.org
Population, health &
environment links

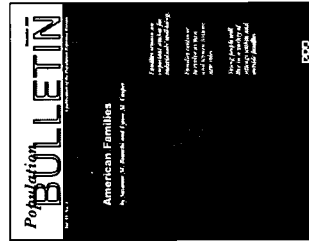
Youth in Sub-Saharan Africa: A Chartbook on Sexual Experience and Reproductive Health

Sub-Saharan Africa has one of the world's youngest populations. About one out of four people in sub-Saharan Africa is ages 10 to 19. To what extent are young people in the region prepared for adulthood? This 44-page chartbook explores this question, reviewing data on adolescents from Demographic and Health Surveys in 11 sub-Saharan countries. Topics include education, sexual experience, marriage, HIV/AIDS, childbearing, contraception, and maternal health. (YSSAFR) \$7.00



American Families

Understanding the ever-evolving American family requires taking the pulse of contemporary family life from time to time. This *Population Bulletin* analyzes the American family in the latter half of the 20th century to better understand what changes in the family portend for the first half of the 21st century. The authors also look at the increase in nontraditional families—including unmarried couples and gay families—and the shift in the division of household and childrearing duties between husbands and wives. (BUL55.4) \$7.00



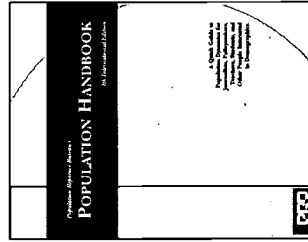
The Career Quandary

According to this latest issue of *PRB Reports on America*, today's U.S. work force is more heterogeneous and older than ever before, and the leading edge of the baby-boom generation begins turning 55 in 2001. Most working husbands have working wives, most children have working mothers, and almost half the work force is now female. The traditional career path, prevalent for white, male, middle-class, and union workers in the 1950s, is now increasingly rare. (ROA2.1) \$5.00



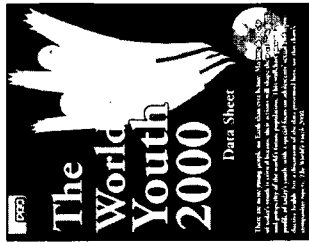
International Population Handbook

The 4th edition of this international handbook contains data from many countries that illustrate the rates, ratios, and concepts of demography. The 4th edition also contains a new section of factors that affect fertility, a revised glossary of terms, a trilingual thesaurus, and a list of sources for demographic information, including websites. (HBINT4) \$10.00 (Also available in Arabic, French adapted for Francophone Africa, and Spanish adapted for Latin America)



The World's Youth 2000

This 24-page report and its accompanying data sheet give a profile of today's youth, providing data on population, education, and health, with a special focus on sexual and reproductive health. Topics include: education, sexual and reproductive lives of young people, use of contraception, sexual violence against young women, HIV/AIDS, and policy and program approaches. (The report includes all the data in the data sheet, but the data sheet does not contain all the text and charts in the report.) Sold separately or as a set: Report (100WYBK) \$5.00; Data Sheet (100WYDS) \$4.50; Both Report and Data Sheet \$8.50



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TEACHER'S GUIDE

human POPULATION

Fundamentals of growth and change

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human POPULATION

Fundamentals of growth and change

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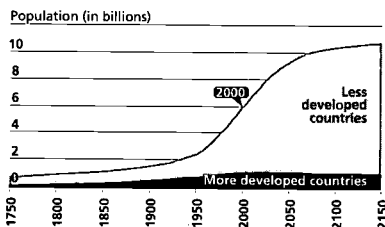
population **GROWTH** and **DISTRIBUTION**

Discussion questions

CHART

1. According to the projection shown on "World population growth: 1750-2150," about what percentage of growth is projected to occur in less developed countries after 2100?
2. Which region is projected to gain the greatest share of world population between 2000 and 2050?
3. During what "age" of human history did the world's population begin to grow rapidly?

World Population Growth, 1750-2150



READING

1. What is the world's population in 2000? How many people were added to the world population in 2000?
2. Which regions have the fastest rate of population growth?
3. In which region does the greatest share of the world's population reside?

DATA

Examine the *World Population Data Sheet* insert in this publication.

1. Select five countries and find the corresponding population estimates, growth rates (rate of natural increase), and doubling times. Apply the rate of natural increase to the population to find the number of people being added to those countries this year. How do the doubling times (for the current rates of natural increase) relate to the projected populations?
2. Find the countries with the highest and lowest growth rates. In which regions are these countries located?

DISCUSSION

1. World population growth was very slow during the Stone Age. Why was growth so slow during this period?

Web resources

Food For Thought Lesson Plan, from the Population Reference Bureau
www.prb.org/ef/lessons/food_for_thought.html

Food for Thought is a spatial graphing activity that requires the participants to be part of the graph. The purpose of the activity is to help students develop a true feeling for the similarities and differences between populations of major regions on Earth. Many measures are used for comparison including population, population density, population growth rates, life expectancy, energy consumption, CO2 emissions, and more. Middle to high school.

How Many People Have Ever Lived on Earth?

www.prb.org/wf/quickfacts/everlive.htm

This is a popularly asked question, answered by the Population Reference Bureau. Provides benchmark estimates from 8000 B.C. and discussion about how difficult these estimates are to make.

World Population Data Sheet, from the Population Reference Bureau
www.prb.org/pubs/wpds2000/

The World Population Data Sheet contains the latest population estimates, projections, and other key indicators for all geographic entities with populations of 150,000 or more and all members of the United Nations. Students can also create customized data tables from PRB's searchable database.

Historical Estimates of World Population, from the U.S. Census Bureau
www.census.gov/ipc/www/worldhis.html

A series of historical world population estimates from a variety of sources up to 1950.

World Population Profile, from the U.S. Census Bureau
www.census.gov/ipc/www/world.html

The U.S. Census Bureau piece is a look into the composition and distribution of world population for the current year. Also provides links to statistics on population counts and vital statistics.

World Population Growth from Year 0 to 2050, from the United Nations
www.popin.org/pop1998/4.htm

From the United Nations revision of *World Population Estimates and Projections*, this chapter looks at the history of world population growth.

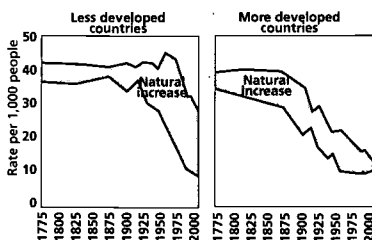
natural increase and FUTURE GROWTH

Discussion questions

CHART

1. What were the levels of birth and death rates in less developed countries and in more developed countries in 1775?
2. Describe how the birth and death rates in the less developed and more developed countries changed from 1775 to 1995.

Population Growth Through Natural Increase, 1775-2000



READING

1. What are the components of population change?
2. How does the world population growth rate today compare with the growth rate at other times in history?
3. What were the causes of the "mortality revolution" in Europe and North America?
4. Compare and contrast the demographic transition in more developed and less developed countries.
5. How are population projections made?

DATA

The rate of natural increase is the difference between birth and death rates. It measures the degree to which a population is growing. Since birth and death rates are measured as the number of births (or deaths) occurring per 1,000 population, the difference is divided by 10 to convert this rate into a percentage.

$$\text{Rate of Natural Increase} = \frac{\text{Birth Rate} - \text{Death Rate}}{10}$$

1. Using the birth and death rates from the *World Population Data Sheet*, calculate the rate of natural increase for five countries or regions. (Due to rounding, answers may differ slightly from the rates of natural increase on the data sheet.)
2. Find five countries that appear to have reached the fourth stage of the demographic transition (in which death rates are higher than birth rates).

DISCUSSION

1. What technological, economic, and social factors might cause levels of mortality and fertility to change?
2. What do you think the prospects are for the changes in birth and death rates in the United States?
3. Examine the projections shown in "Future of world population growth: three scenarios, 2000 to 2050" (p. 8 in *Human Population* booklet). Which projection do you think is most likely? Why?

Web resources

Facts in Focus Lesson Plan, from the Population Reference Bureau
www.prb.org/lessons/facts_in_focus.html

A series of short activities examining the wealth of data on the world, regions and individual countries from PRB's *World Population Data Sheet*. This piece also introduces students to major demographic concepts through computational and data analysis activities. Middle to high school.

World Population Data Sheet, from the Population Reference Bureau
www.prb.org/pubs/wpds2000/

The World Population Data Sheet contains the latest population estimates, projections, and other key indicators for all geographic entities with populations of 150,000 or more and all members of the United Nations. Students can also create customized data tables from PRB's searchable database.

The Population Story Presentation Guide, from the Population Reference Bureau
www.prb.org/pubs/population_story/contents.htm

This publication is an online resource tool of 51 colorful charts and graphs that can be used to tell the population story in your own lectures. PDF versions can be used to print transparencies, and each chart and graph has bulleted talking points.

World Population Estimates and Projections, from the U.S. Census Bureau
www.census.gov/ipcl/www/idbnew.html

The Census Bureau International Data Base includes a profile of population for 227 countries and selected groups of countries. Estimates and projections date back as far as 1950 and as far ahead as 2050.

World Population Estimates and Projections, from the United Nations
www.un.org/esa/population/worldpop1998.htm

This publication is the official listing of the United Nations' estimates and projections for world population.

effect of **MIGRATION** on population growth

Discussion questions

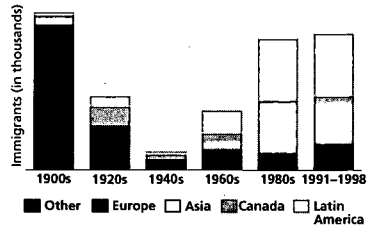
CHART

1. How has the proportion of Asian immigrants changed during the 20th century?

READING

1. How much does immigration contribute to population growth in the United States?
2. Why do people move?
3. Give examples of other "push" and "pull" factors.

Regional Origins of Immigrants to the United States, Selected Years



DATA

1. Obtain data from a library, your state data center, the U.S. Census Bureau, or the Population Reference Bureau on the recent components of change for your state. How much growth in your state is due to net migration?

DISCUSSION

1. Where did your ancestors come from? If your ancestors are not American Indian, Alaska Native, or Native Hawaiian, when did they come to the United States? Why?

International Migration: A Global Challenge, from the Population Reference Bureau

www.prb.org/pubs/population_bulletin/bu51-1/51_1_intro.htm

This 44-page report examines the forces behind international migration patterns including a discussion of the many demographic and economic factors involved. This is a great background piece for more information on the subject of migration.

Teacher Resources, from the Immigration and Naturalization Service

www.ins.usdoj.gov/graphics/aboutins/history/teacher/Resources.htm

This section links educators to information about the history of immigration into the United States and a summary of developments within immigration law. There are also links to immigration statistics and fact sheets for understanding historical and recent trends.

Foreign-Born Population Estimates, from the U.S. Census Bureau

www.census.gov/population/www/socdemol/foreign.html

A series of reports on the recent trends of immigrants into the United States; includes the characteristics of natives and the foreign-born population. A working paper provides a historical look at the foreign-born population from 1850.

Migration News

migration.ucdavis.edu/mnlindex.html

Migration News summarizes the most important immigration developments around the world each month, including reviews of recent research publications. Each article is of reasonable length at a high school reading level.

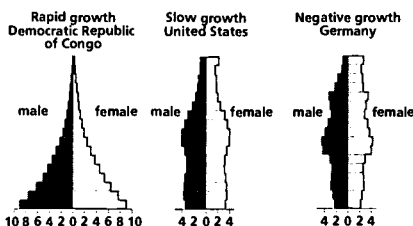
three patterns of POPULATION CHANGE

Discussion questions

CHART

1. What percentage of the population of the Democratic Republic of Congo, the United States, and Germany are 0-4 years old?
2. Which of the three countries has the greatest proportion of people ages 65 and older?

Three Patterns of Population Change



READING

1. How can the age-sex structure of a population help determine the needs of that population?
2. What does it mean to have a "young" or "old" population?
3. How can migration affect the shape of a pyramid?
4. What is "zero population growth"? Which pyramid represents this concept?

DATA

The dependency ratio is a measure used to indicate the ratio of persons in the "dependent" ages (under 15 and ages 65 and older) per 100 persons in the "economically productive" ages (15-64 years of age). The formula for the dependency ratio is:

$$\frac{\% \text{ Population under age 15} + \% \text{ Population age 65+}}{\text{Population ages 15-64}} \times 100$$

The age dependency ratio for the United States is shown below at 54.

$$\frac{22 + 13}{65} \times 100 = 53.8$$

This means that there were 54 persons in the dependent ages for every 100 persons in the working ages.

1. Calculate the dependency ratios for Kenya, Germany, Brazil, and Japan. Compare the components of each of them.

DISCUSSION

1. Discuss the implications of high or low dependency ratios for economic resources and development.

Web resources

Pyramid Building Lesson Plan, from the Population Reference Bureau
www.prb.org/pubs/lessons/pyramid.htm

A graphing activity to help students understand the importance of age structure on population growth; for middle to high school.

Instructions for Creating Population Pyramids using Microsoft Excel, from the Population Reference Bureau
www.prb.org/pt/1999/may99_pt.pdf

This article from PRB's *Population Today* newsletter includes steps to utilize the spreadsheet program Excel to create age and sex diagrams.

U.S. Census Bureau Population Estimates and Projections
www.census.gov/population/www/estimates/poest.html

Use this link as a starting point to gather age and sex data by race and Hispanic origin for national, state and county estimates for the years 1990 to the most recent year. Data for lower level geography (places, census tracts, metro areas) can be obtained for 1990 (STF3) from American FactFinder: <http://factfinder.census.gov>.

www.census.gov/population/www/projections/popproj.html

*Use this link as a starting point to gather data on projections of age and sex by race and Hispanic origin for the nation and states to the year 2025.

U.S. Census Bureau International Data Base
www.census.gov/ipcl/www/idbpyr.html

A graphical display of population pyramids by country for 2000, 2025, and 2050. Provides a dynamic function to display the change in age-sex distribution over time.

www.census.gov/ipcl/www/idbacc.html

Provides access to estimates and projections of age and sex data by country for the years 1950 to 2050.

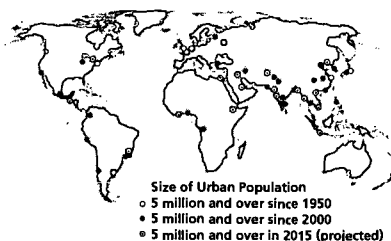
patterns of world URBANIZATION

Discussion questions

CHART

1. Where will most of the new 5 million-plus cities spring up in 2015—in more developed or less developed countries?
2. How did growth in London differ from that of Lagos in the past 50 years?

**Largest Urban Agglomerations,
1950, 2000, 2015**



READING

1. What is the definition of an urban area?
2. In 2000, do most of the world's people live in rural or urban areas?
3. Describe the differences in the patterns of urbanization in the more developed and less developed countries.

DATA

1. Find the column on the *World Population Data Sheet* showing the percent of population residing in urban areas. Also examine the list of the largest cities found in the table "Top 10 largest agglomerations" (p. 20 in *Human Population* booklet). For the 10 largest cities, calculate the proportion of the country's population living in that city in 2000. For example, 18.4 million people reside in Mexico City; this is 18.5 percent of Mexico's population.

DISCUSSION

1. Why are megacities increasing so rapidly in less developed countries? What are some implications of rapid growth in these cities?

An Urbanizing World, from the Population Reference Bureau

www.prb.org/pubs/population_bulletin/bu55-3/55_3_intro.html

The 44-page report discusses urban population trends, demographics, and challenges in the world's cities. This is a great background piece to get more information about issues concerning urban populations.

Urbanization Prospects, from the United Nations

www.un.org/esa/population/urbanization.htm

This piece presents estimates and projections for urban and rural populations of the world for the period 1950-2030.

Cities of Today, Cities of Tomorrow Curriculum Unit, from the United Nations

www.un.org/Pubs/CyberSchoolBus/special/habitat/index.html

The project provides a systematic and interactive study of cities from a historical overview of urban development to specific studies of urban violence or homelessness. The curriculum and all its activities will culminate in the creation of an "Ideal City."

Urbanization Issues, from The World Bank Group

www.worldbank.org/html/schools/issues/urban.htm

This section points to discussions about urbanization issues, data, and news within the World Bank. The site includes a global perspective on urbanization and its implications, and resources for teachers.

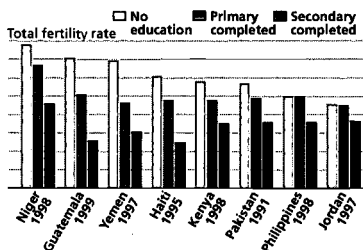
the status of WOMEN

Discussion questions

CHART

1. After examining the information on the related chart, what can be observed about the relationship between women's education and family size?

Women's Education and Family Size in Selected Countries, 1990s



READING

1. What are some of the ways that education can play a role in determining family size?
2. What determines the number of children a woman will have?
3. What are some of the factors that "indirectly" affect fertility?

DATA

1. Contraceptive prevalence is a determinant of fertility. Using information from the *World Population Data Sheet*, prepare a graph to show the relationship between contraceptive use and fertility?
2. What other indicators on the *World Population Data Sheet* might provide information on the status of women?

DISCUSSION

1. Consider how the status of women in the United States has affected family size.

Women of the World Data Sheet, from the Population Reference Bureau
www.prb.org/pubs/women98.htm

This resource from PRB provides data for more than 150 countries on the quality of women's lives around the world. It also includes charts and small pieces on special topics. The data is also available on PRB's searchable database.

Information on Women, from the United Nations

www.un.org/ecosocdev/geninfo/women/

This site provides various statistics featuring women's political participation, women and education, labor, population, health, and violence. There are also links to UN documents and websites that relate to women.

Gender Issues, from the World Bank Group

www.worldbank.org/html/schools/issues/gender.htm

This section points to discussions about gender issues and resources from the World Bank, including links to gender statistics and world development indicators. The site provides further information about gender and economic development, and gender and education.

Women and Population Issues in Sustainable Development, from the United Nations

www.fao.org/waicent/faoinfo/sustdev/WPdirect/WPhomepg.htm

A section of Sustainable Development DIMENSIONS, from the Food and Agriculture Organization of the United Nations, the information here consists of news, analysis, and resources on gender-population concerns, especially in rural areas.

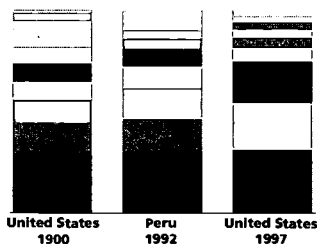
world HEALTH

Discussion questions

CHART

1. What was the leading cause of death in the United States in 1997? What proportion of deaths was attributable to this cause in the United States in 1900 and in Peru in 1992?
2. What proportion of deaths in Peru in 1992 did infectious and parasitic diseases cause?

Major Causes of Death in the United States and Peru



READING

1. How have life expectancies changed in more developed countries since the Roman Empire?
2. Why are infant mortality rates over 100 in some less developed countries?
3. What types of diseases are the most common causes of death in the more developed regions?

DATA

1. Examine the columns on the *World Population Data Sheet* showing infant mortality and life expectancy. Find these variables for 10 countries and examine their relationship. Examine the relationship between the IMR, the birth rate, and GNP per capita.

DISCUSSION

1. Consider the implications of citizens' health on decisionmakers in local governments.

Attaining Global Health: Challenges and Opportunities, from the Population Reference Bureau

www.prb.org/pubs/population_bulletin/bu55-1/55_1_intro.htm

This report from PRB looks at trends in health over the past century, including an exploration of the multiple factors that determine health. The report also includes a variety of health-related charts and graphs.

World Health Organization

www.who.int/

This United Nations' agency site provides information on global health. The World Health Report provides access to health-related statistics and updates on health trends and issues.

Pan American Health Organization

www.paho.org/

This organization focuses on the health of the Americas and provides country health profiles, health indicators, and health trends and analysis. The site also includes short news reports and statistics by country.

National Center for Health Statistics

www.cdc.gov/nchs/

NCHS collects data on births and deaths for the United States and posts tabulated data by state on a variety of health-related statistics. Some of the data is available in spreadsheet format and includes charts and graphs.

United Nations HIV/AIDS Information

www.unaids.org

This site provides information about the current status of the disease. Online access is available for background reports, surveillance statistics, and fact sheets.

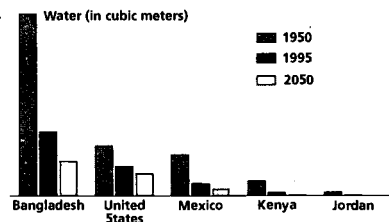
ENVIRONMENTAL relationships

Discussion questions

CHART

1. Why do countries vary so greatly in the availability of fresh water? Especially in places like Kenya and Jordan?
2. The United States and Bangladesh have roughly the same amount of renewable fresh water, yet the amount of water available to each person in Bangladesh is almost twice the amount available to each U.S. citizen in 1995. Why might the rate of water availability be projected to fall more quickly in Bangladesh over the next 50 years?

Per Capita Annual Freshwater Availability, 1950, 1995, 2050



READING

1. Outline some of the links between population and the environment.
2. Describe how consumption patterns and population size may each contribute to environmental degradation.
3. What are the implications of disparity between population size and energy production and consumption?

DATA

1. Examine environmental data available online from organizations like the World Resources Institute (www.wri.org) and look at how these variables compare with what is happening in your local region or state with data available from organizations like the Environmental Protection Agency (www.epa.gov).
2. Compare environmental data with demographic indicators on the *World Population Data Sheet*. Create two choropleth maps for two comparable indicators.

DISCUSSION

1. What are some important considerations to keep in mind when developing strategies or plans to ensure sustainable development?

Adventures on Earth: Exploring Our Global Links Lesson Plans, from the Population Reference Bureau

www.prb.org/ef/lessons/adventures_on_earth.html

Adventures on Earth is a 50-page classroom guide of interactive lessons, designed for educating students about how people use the environment, the consequences of meeting human needs, and the environmental impact of people's actions and choices.

US in the World, from the Population Reference Bureau

www.prb.org/news/usworld.htm

US in the World is a project to help Americans explore how shared concern for the environment links people in the United States to people in other parts of the world. The project includes the production of a series of fact sheets profiling the population-environment trends of a state in the United States and its comparable developing country.

Environmental Education on the Internet

www.nceet.snre.umich.edu/

A project by the North American Association of Environmental Education, this site provides links to a variety of websites with education resources for teachers and students.

World Resources Institute

www.wri.org

The materials published by WRI include their annual *World Resources*, reporting the latest trends related to environmental issues. The site also includes country profiles and statistics.

Environmental Protection Agency

www.epa.gov

The U.S. Environmental Protection Agency posts information about national, state, and local environmental issues. The site has a special section for teachers, with background resources and materials, and another for students to explore a variety of topics.

Visit PRB's **Educators Forum**

Tools for teaching about population issues, trends, and their implications. Access to lesson plans and population information.

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